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PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

**An Investigation of the Relationships between Physical Health, Physical Activity and
Depressive Symptomatology among Older Adults in New Zealand**

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

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Abstract

Research has highlighted the importance of understanding potential risk and protective factors in relation to depression among older adults. In particular, the beneficial role of physical activity on depressive symptoms has been previously highlighted. Using the biopsychosocial model of depression this thesis investigated the relationships between physical health, physical activity and depression. The current study utilised data from the 2018 of the Health, Work and Retirement (HWR) survey, on 3919 community-dwelling older people aged between 55 – 70.

A series of hierarchical multivariate regressions showed that after controlling for demographic, health variables and anxiety, both physical health and physical activity showed significant negative relationships with depression. Consistent with previous research, and in support of hypotheses those who engaged in more physical activity showed less depressive symptomology and those with poorer health showed more depressive symptomology. However, physical activity did not moderate the relationship between physical health and depression as hypothesised.

The current study highlights the need for research on depression among older adults, and the importance of investigating both protective and risk factors for depression. The findings show that poor physical health is a key risk factor for depression and that physical activity is an important consideration among older adults with depression. The current study shows a need for further investigation into protective factors as possible interventions targeting depression among older adults.

Dedication

To my brother Jonathon Gilbert, you have inspired me in so many ways, you are the reason I went back to finish my masters and follow my passion. You are greatly missed and forever loved.

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Chapter 1: Introduction

Depression is a commonly used term that describes a range of everyday experiences (Hammen & Watkins, 2018). Not only is it used to refer to a state of being sad or down, but it can also signify a clinical mental disorder that affects approximately one hundred million people around the world (Hyman, 2013; Smith, Armour, Lee, Wang, & Hay, 2018).

Depression is a common but severe affective disorder that can affect how you think, feel, and function during daily activities such as eating, sleeping, and working. The World Health Organisation has described depression as an “unseen burden” (Smith, Armour, Lee, Wang, & Hay, 2018). Although depression is among the most common affective disorders it does have significant costs to the individual affected and society, with impacts on personal health, functioning and interpersonal difficulties along with larger societal costs such as resources available to treat depression and the impact it has on the wider healthcare system (Johnson, 2005). Researchers have developed theories regarding depression, in an attempt to better understand depression, and in order to better detect, treat and prevent at the individual, societal, and policy level.

Although a lot of research has been conducted examining depression as a disorder, the topic of depression among *older adults* has been relatively neglected until more recent years. The reasons for this neglect includes the fact that this group of those aged 60+ was seen to comprise of a small portion of the population, and an emphasis on childhood experiences in determining mental wellbeing took a greater priority (Beekman, et al., 1997). Fortunately, more recently an ageing population has resulted in more interest into the area of depression among older adults as well more pressure to understand how it is experienced within the older population. This is to ensure that prevention and treatment efforts are effective and targeted towards the new demographic in order to best keep up with the rising demand for specialist services that come with an ageing population.

The risk factors for depression are great among older adults than most other populations (Blazer, 2003), as older adults have unique age-related environmental and physical stressors such as relocations, bereavement, physical and cognitive decline. However, research has shown that older adults have similar prevalence rates to younger adults, but lower severity suggesting that people may develop protective strengths as they get older (Beck, 1987; Djernes, 2006). Utilising these protective strengths as a preventative measure and for treatment efforts may help to lower the number of older people experiencing depressive symptomology. Research has clearly established that physical activity has many health benefits and can have a positive effect on various mental disorders including depression among the general population (Chodzko-Zajko, et al., 2009; Drewnowski & Evans, 2001; Gregg, Pereira, & Caspersen, 2000). This suggests that physical activity may be a protective factor as it has been shown to have a positive influence on overall wellbeing among the older population, including on depression and depressive like symptoms (Chodzko-Zajko, et al., 2009).

The current study will aim to investigate the relative contribution of the specific risk factors experienced by older adults on depressive symptomatology, and to clarify the role of physical activity as a moderating factor on this relationship. Analyses are based on the New Zealand Health Work and Retirement (NZHWR) survey data set, which was taken from a sample of older adults, including an over sample of Māori. This thesis will begin by briefly reviewing the literature for depression and depression among older adults. A review of the current understandings and theories of depression in later life will be provided, followed by a review of the different types of depression risk factors, focusing on physical health. Physical activity will also be examined as a protective factor and its influence on depression within the older adult population will be highlighted, research aims, and hypotheses will be presented.

Chapter 2: Literature review

2.1 What is Depression

Depression is not a new phenomenon, it is an ageless, and universal affliction (Hammen & Watkins, 2018), typically characterised by anhedonia or low mood, accompanied with a range of symptoms that can include; fatigue, difficulty concentrating, feelings of worthlessness, guilt, loss of appetite, sleep disturbance, and thoughts of suicide or death (American Psychiatric Association, 2013). Early reports of depression have been noted in various biblical characters, one example is King Solomon who was said to have suffered from dark moods by an evil spirit, which lead to him taking his own life (Gilbert, 2017). More recent sufferers of depression include various politicians (e.g., Abraham Lincoln and Winston Churchill) and various writers, poets and artists (e.g., Edgar Allen Poe) (Gilbert, 2017). Although it has been shown in many ancient texts from the bible to Russian novels, there is still a lot to learn about the disorder. Unlike many other illnesses, depression has been recognised and described in some way, for over two millennia (Gilbert, 2017).

In recent years there have been various reports, that show the prevalence rates for affective disorders has increased, and that the onset of depression appears to be occurring earlier (Joyce, Oakley-Browne, Wells, Bushnell, & Hornblow, 1990). According to the New Zealand Health Survey 2017/18, one in six adults in New Zealand have at some point during the course of their lives, been diagnosed with a common affective disorder (including bipolar, depression, and anxiety) (Ministry of Health , 2018). The New Zealand health survey also found that 16.6% of adults within New Zealand have been clinically diagnosed with depression at some stage within their life time (Ministry of Health , 2018). A survey conducted by the Health Promotion Agency used the Patient Health Questionnaire (PHQ-9) to measure the population distribution of depression, this is a widely used scale in primary care as a depression screening tool. They found that 22% of the population met the mild to

moderate scores for depression and 3% for severe (Kvalsvig, 2018). However, it is suggested that depression rates are significantly higher than what is reported, as many people do not come forward and seek help (McGee, Williams, Kashani, & Silva, 1983). Depression is considered to be a highly recurrent disorder, with over 75% of those with depression suffering from more than one depressive episode, often developing a depressive relapse within two years (Gotlib & Hammen, 2009). It is suggested based on the high recurrence rate that, specific risk factors may serve to increase the likelihood of developing repeated episodes of depression (Gotlib & Hammen, 2009).

The term depression is used as an umbrella term that covers a large number of depressive disorders, with many symptoms that often overlap with other common mental disorders (Wakefield & Demazeux, 2016). The multiplicity of the symptoms of depression means that those diagnosed can differ drastically from one another in their manifestation of the disorder and in the severity and nature of their symptoms (Hammen & Watkins, 2018). Depression as a clinical mental disorder that is characterised by loss of enjoyment, dulled mood, loss of pleasure or anhedonia that results in clinically significant impaired functioning or distress. When understanding depression as a clinical disorder, it is important to understand the difference between a temporary mood decrease and what is classed as a profoundly distressing and even life-threatening disorder (Fiske, Wetherell, & Gatz, 2009). Most individuals go through periods of sadness which may not be considered clinically significant enough to be classed as depression but are simply considered a part of life (Wasserman, 2011). Wasserman (2011) suggested that these periods of temporary sadness may even be necessary to develop and form our personalities.

It is normal to go through a state of sadness or loss of energy for a few days, especially if this mood is triggered by a life event such as a loss of a loved one, ending of a relationship or other upsetting event. However, clinical depression refers to a combination of

experiences including physical, mental and behavioural experiences that cause significant impairment and impact on daily functioning (Hammen & Watkins, 2018). Hammen and Watkins (2018) suggested that individuals in western societies are raised with the expectation that they have control over their emotions and moods. This expectation is what may lead to confusion for many individuals who do not suffer from depression but know someone who does. It can be distressing for friends and family members of individuals with depression, as they cannot simply 'snap out' of it, instead they observe their loved one feeling helpless, hopeless and self-hating which can seem illogical and irrational to those who do not understand depression (Hammen & Watkins, 2018). The lack of physical signs of the illness lead many to believe it is simply a mind over matter fix to depression.

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM), which is a set of guidelines for diagnosis and is now on its fifth Edition-Revised (DSM-V) (American Psychiatric Association, 2013), there are multiple different depressive disorders. There are the two main classifications which are unipolar and bipolar, the symptomology for these are distinctly different in the sense that bipolar is diagnosed based on an individual's episodes of mania and depressive condition. Mania is defined as a distinct period of persistently and abnormally elevated, or irritable mood, energy and activity lasting a minimum of one week (Hammen & Watkins, 2018). Bipolar contrasts to unipolar where the individual only experiences the depressive symptoms (Hammen & Watkins, 2018). The DSM-V classifies different forms of depression within the unipolar depression category, including Major Depressive Disorder (MDD) and Dysthymia otherwise known as Persistent Depressive Disorder (PDD). MDD is characterised by a persistently depressed mood, anhedonia and other cognitive, behavioural and physical symptoms (disturbed sleep, feelings of guilt and suicidal thoughts), every day for the past two weeks. Persistent depressive

disorder is diagnosed if the individual experiences depressed moods most of the day for majority of the past two years (Hammen & Watkins, 2018).

Researchers looking into depression have typically used two main approaches to defining depression; the *diagnostic approach* and the *symptomology approach*. Both approaches recognise anhedonia or depressed mood as the main feature of depression. The first approach is the diagnostic approach, which uses the clinical classification system set out in the DSM-V (American Psychiatric Association, 2013). This approach involves researchers using the diagnosis from trained professionals, or cut off scores from widely used psychometric tests, which have been well validated such as the Beck Depression Scale (Beck, 1961). The symptomatology approach looks more into the occurrence of depressive like symptoms which cause clinically significant impairment or distress as a way to more broadly define depression, this approach removes the need to meet a pre-defined set of criteria (such as various symptoms or symptoms present daily over a particular length of time) (Berkman, et al., 1986).

The diagnostic approach has received some criticisms, as many clinicians and researchers view this approach as merely a way of categorising symptoms, which are frequently not applicable in practice (Sharp & Lipsky, 2002; Zigler & Phillips, 1961). An important criticism that has been noted specific to depression among older adults, is the challenges of applying diagnostic criteria in relation to ageing. One of the criteria listed in the DSM-V requires the clinician or researcher to ascertain whether the presence of depression is linked to a prescribed medication or a medical condition. This poses some challenges with older adults given that physical illness and medications are increasingly common with ageing. Other issues include the criteria of significant impairment in areas such as the individual's interpersonal life and occupation. This can be difficult considering older adults

are likely to be in retirement and have reduced social networks, along with encountering a higher number of losses and bereavement among older adults.

The symptomatology approach is generally favoured by researchers looking at depression among older adults, as it is more likely to capture older adults who have experienced depressive symptoms within the context of ageing. When researching depression, a group of depressive symptoms may not constitute a particular depressive disorder, however, a number of symptoms that meet a certain threshold has been more reliably associated with significant distress and impairment (Sharp & Lipsky, 2002). The symptomatology approach also holds the perspective that depression is experienced along a spectrum of severity and not as a cut off. Screening for clinically significant depressive symptoms is often easier, as it is often administered in the form of a checklist meaning the interviewers are not required to be a clinician and may be seen to be more approachable and easier to open up to. Overall the symptomatology approach, considers the occurrence of depressive symptoms to be an indicator of depression and looks less into the cause or duration related criteria for depression, it also considers strong degree of depression to be linked the greater severity or greater number of symptoms, which is often preferred (Sharp & Lipsky, 2002).

It should be recognised that there are some potential draw backs to using the symptomatology approach to defining depression. Firstly, there is a need to have more consistency around what is considered 'clinically significant' when defining depressive symptoms, secondly this approach has the potential to include certain symptoms as depressive when they are actually part of the ageing process or due to physical illness. It is important for researchers to ensure they use well validated measures for their targeted population when using the symptomatology approach. Although the diagnostic approach is a valid approach as mentioned earlier it can result in an under-representation of the disorder

among older adults. As older adults are the target population the symptomology approach will be used in the current study to define and measure depression.

Depression has been associated with significant suffering not just to the individual but also to their close friends and family, this includes functional decline, stress, physical health complications, interpersonal difficulties, and in severe cases suicide. Numerous studies have revealed that depression is an extremely common illness that can create a substantial economic and social burden (Hyman, 2013). The social and economic costs can have wider implications on societies, for example the resources and healthcare needed to treat depression, along with the secondary implications on the person with depression's mental and physical health and lost productivity (Johnson, 2005). Active areas of research are currently investigating the increased rates of depression and the negative impact depression can have, not just on the individual but on society (Berkman, Glass, Brissette, & Seeman, 2000; Blazer & Hybels, 2009).

2.2 Why older adults

Western societies put an emphasis on age as a means to understand and divide the course of life. It can indicate changes to societal roles, and shared cohort experiences as well as psychological and biological changes that occur during the course of life (Harper, 2006). In the 20th century, many western societies established the beginning of 'old age' to occur when an individual reaches the ages of 60 and 65, they have used this age range to define their pension systems, and to establish an accepted retirement age (Brown, 2010). Until more recently the subject of older adults and ageing has been relatively neglected by the field of mental health. It is understandable as to why few people have looked into mental health among older adults, before the mid-20th century, very few people lived past 50 and the mental health of younger adults was prioritised due to the population distribution (Birren & Schroots, 2000). Early key theoretical approaches from that time, including, experimental psychology

and behaviourism were more focused on understanding the younger years of life. They were more interested in child development and early life experiences as they were, at the time, considered to be the main cause of all psychological disorders. They also saw those earlier years of life as a fundamental period of biological and psychological maturation, which in turn lead to more research being focused on the mental health of younger adults.

In recent times there has been a growing interest in older adults as a distinct group with specialised needs. There has been an increasing interest in challenging stereotypes that surround being old and ageing populations, which has resulted in an increase in proportions of older adults and ageing research (Birren & Schroots, 2000; Brown 2010). Ageing populations are a worldwide occurrence, with the number of people over 60 tripling since 1950 (United Nations, 2009). In New Zealand, between 1950's and 1990's the expectation of life at age 65 has increased by 15-19 years (Statistics New Zealand, 1998). The older population has significantly increased from the early 1970's where they represented one in twelve of the population, now older adults represent one eighth of the population (Tang, Boddington, & Khawaja, 2007). It is projected that by 2051, there will be at least 60 percent more older people than children in New Zealand.

This increase in the ageing population inevitably means a rise in pension numbers and increased demand on health care services. It is suggested that in New Zealand and worldwide, mental healthcare services, especially specialty care targeting older adults with depression will not be able to meet the economic and labour requirements associated with the increasing older population experiencing depression (Te Pou & Duncan, 2011). It has also been predicted in 10 years' time the demand on the healthcare system will be up to 40% higher than what is available to older adults at present (Te Pou & Duncan, 2011). According to the World Health Organisation, mental disorders affect 20% of older adults, with the most common mental disorders being depression and dementia (Wermelinger Avila, Lucchetti, &

Lucchetti, 2017). Most studies have found that the prevalence for depression among older adults is around 10% (Wermelinger Avila, Lucchetti, & Lucchetti, 2017).

Research has highlighted the crucial need to understand mental health among older adults, to ensure that the disorders affecting that population the most can be identified and focused on more efficiently and effectively in order to reduce the associated personal and social costs. Primary and secondary prevention measures are currently used including cognitive behavioural therapy, social support, and medication (Dozois & Dobson, 2004). There is a growing need for more efficient treatment to be investigated and used along with primary and secondary prevention, which are currently considered acceptable approaches that aim to reduce depression rates and the costs linked with depression among older adults. These prevention approaches share a common need to be research and evidence based, in order to ensure their effectiveness. Greater understanding and knowledge about depression among older adults is essential for raising public awareness, the evaluation of programmes and to inform public policy. Including, a greater understanding of the presentation, causes, risk and protective factors related to depression within the older population.

2.3 Depression among older adults

Until the mid-twentieth century, research had widely neglected the topic of mental health among older adults' (Birren & Schroots, 2000). Previously older adults encompassed a relatively small portion of the population, where the average life expectancy was not as high as it is today. Due to this, earlier theories focused primarily on childhood experiences as a means of determining mental wellbeing. Fortunately, more recently researchers have begun to investigate older adults' mental and physical wellbeing, as the increasing ageing population has led to more efforts being focused on treatment and prevention (Birren & Schroots, 2000). Fortunately, experts have started to move away from the many misconceptions about late life depression, such as the idea that experiencing depressive

symptoms is just another part of the ageing process. Although depression rates are lower within the older population, it can still have serious consequences; such as health issues, loss of interpersonal relationship, loneliness and even suicide (Fiske, Wetherell, & Gatz, 2009).

Unfortunately, although older adults are living longer it is not necessarily connected to their quality of life. This is mostly credited to the fact that many older adults depend on medication and social welfare support and care (Becker, et al., 2018). It has been suggested that an individual's beliefs and attitudes about ageing are shaped from societal attitudes and personal experiences throughout the course of their life. These attitudes have been shown to have an impact on outcomes via psychological, physiological, and behavioural pathways, these in turn influence their overall health outcomes (Freeman, et al., 2016). Recently, a growing body of research has started showing the connection between one's negative views of ageing and the negative impact that has on their different outcomes health outcomes, for instance physical health and functioning, cognitive functioning, depression and anxiety (Freeman, et al., 2016; Wurm, et al., 2007). Vahia, et al., (2010) looked into successful ageing and found that older adults that experienced mild to moderate levels of depressive symptomology, showed significantly worse functioning on majority of components.

Depression is one of the most common illnesses experienced by the older population. Some studies have suggested that one in four older adults report clinically significant depressive symptoms and that their symptoms increase further with age (de Lima Silva, et al., 2017; Hazell, Smith, & Jones, 2019; Singh, Mazi-Kotwal & Thalitaya, 2015). Although the suspected number of cases of depression is quite high only around 5% of older people are actually referred for treatment (Hazell, Smith, & Jones, 2019). The recognition of symptoms among older adults is more challenging, and cases are suspected to be under reported due to the difficulty of tracking patients with depression, which can impact on patient health and

may lead to significant losses in the development of health policies (de Lima Silva, et al., 2017).

Integrating care that both supports the promotion of mental health and health in general is becoming more increasingly recognised as a necessity (Waterworth, Arroll, Raphael, Parsons, & Gott, 2015). One of the issues health practitioners are facing is that, older adults tend to down play or deny any concerns they may have regarding their own mental health, or they accept their mood changes as a normal part of ageing (Waterworth, Arroll, Raphael, Parsons, & Gott, 2015). Although, primary care has been recognised as the most suitable place for assessing and managing the long term care of depression among those with physical health issues, there is a lack of consistency by General Practitioners (GPs) in their identification and understanding of depression (National Health Committee, 2007; Waterworth, Arroll, Raphael, Parsons, & Gott, 2015). Research has also shown that older adults in primary care have significantly lower rates of receiving appropriate treatment and care for their mental disorders (Kendrick, et al., 2009).

Depression can increase functional impairment among older adults as well as decreasing their sense of wellness, impacting their recovery from illnesses and their quality of life (Waterworth, Arroll, Raphael, Parsons, & Gott, 2015). Being able to identify older people with physical health issues who already have or are at risk of developing depression is crucial, as depression has been shown to have an impact on the way the individual manages the care of their other health issues (Waterworth, Arroll, Raphael, Parsons, & Gott, 2015).

Kessler and Bromet (2013) reviewed findings from epidemiological surveys sponsored by the World Health Organisation and found that the median age for onset of depressive disorders was in the mid-20s. Earlier age onset of depression has been connected to a greater chance of chronicity, impairment and declined functioning, and generally worse overall outcomes with depression, (Hammen & Watkins, 2018). This lowering age of onset

could have a major impact on older adults, as the chances of functional decline and chronic depression is going to increase (Hammen & Watkins, 2018).

Depression is one of the most significant and prevalent mental disorders within the older population (Heo, Ryu, Yang, & Kim, 2018). One of the major subtypes of depression as mentioned earlier is MDD which is a chronic psychiatric disorder associated with significant morbidity (Singh & Mastana, 2015). Several studies have found that, between 1% and 2% of older adults meet the criteria for MDD (Singh & Mastana, 2015). However, it is often undiagnosed and in many cases depression among older adults goes untreated (Wasserman, 2011). Depression is a more internalised subjective suffering, not necessarily expressed externally, which means the illness is it often overlooked (Hammen & Watkins, 2018).

Although depression can be difficult to diagnose it can still have a big impact on the individual's overall wellbeing. It is also common that individuals who have not previously experienced any form of depression may become severely depressed as they age (Fiske, Wetherell, & Gatz, 2009). This can occur due to the changes in their life situation as they get older, where they often find themselves feeling lonelier even when they are being cared for (Wasserman, 2011). Many studies have identified that late-onset depression among older adults have an increased chance of developing cognitive deficits, or are more likely to subsequently develop other cognitive illness such as dementia (Fiske, Wetherell, & Gatz, 2009).

Compared to younger adults with affective disorders, older adults tend to show somatic and cognitive symptoms and are less likely to display typical depressive symptoms (Fiske, Wetherell, & Gatz, 2009). Cognitive features of depression include marked difficulties in mental processes involving decision making, concentration, and memory (Hammen & Watkins, 2018). These symptoms are also considered to be common features of ageing, and this overlap in symptoms and features of ageing can make diagnosing depression

difficult in older adults. The typical course of depression among older adults is more of a cycle where they will feel well for a few days or even a few weeks then lapse into a new period of depression (Wasserman, 2011). This cycle of mood dips, means people will assume it is just a common down period and postpone consulting a doctor (Wasserman, 2011).

The negative impact of depression among older adults ranges from its effects on cognitive functioning with ageing (Bassuk, Berkman, & Wypij, 1998) and on overall mortality (Schulz, et al., 2000). It can also have a negative impact on the overall health and recovery from illnesses, as it can diminish the persons motivation to adhere to medical treatments and engage in self-care (Hyman, 2013).

Suicide rates in NZ are the highest since records began, with 668 individuals dying by suicide in 2018 (Ministry of Justice, 2018). The 2018 New Zealand suicide rates showed that adults aged 60-64 years old were among the higher groups with 16.91 per 100,000 population, with the highest group being 20-24 year olds who had 21.21 per 100,000 population (Ministry of Justice, 2018). Regardless of the overall suicide figures it is a major public health concern that is getting more attention over recent years (Hammen & Watkins, 2018). These negative impacts and the growing ageing population is why depression among older adults has become increasingly more important among researchers.

Researchers are beginning to focus more on individuals' self-reports of their psychological wellbeing (Steptoe, Deaton, & Stone, 2015). Psychological wellbeing and physical health are closely linked, and this relationship is considered to become more important among older adults (Steptoe, Deaton, & Stone, 2015). Studies of older adults have indicated that an individual's evaluation of their quality of life is affected by the person's current health, but they have also frequently found that the average self-reported life evaluation increases with age, suggesting that psychological wellbeing is affected by multiple factors (Dolan and White, 2007; Harter & Gurley, 2008; Steptoe, Deaton, & Stone, 2015).

The term psychological wellbeing can be measured in multiple ways and can involve different factors, the current study will focus on psychological wellbeing in the case of depression and depressive like symptoms and behaviour.

There is growing interest and recognition in the older population and how they contribute to communities, including volunteering roles, caregiving, wisdom from experience, and contribution to the economy (Ministry of Social Development, & Office for Senior Citizens, 2011). There are some concerns about the ageing population, which include, the inevitable increase in demand on health care services due to this older population increase (Te Pou & Duncan, 2011). This, in conjunction with the other key reasons discussed above, demonstrate why depression among older adults is gaining interest and requires further research.

2.4 Depression theories

There have been numerous theories relating to depression, and healthy ageing. Stress has been identified as an significant factor to the development and course of many mental disorders, because of this a variety of models have included stress as a primary contributor to the many mental disorders etiology (Ingram & Luxton, 2005). Research investigating the relationship between depression and stress have predominately been based on negative episodic stressors (single distinct events with a clear beginning and end) (Hammen, 2005). Another category of stress is chronic stress, which is defined as stress lasting longer than 12 months, (such as stress related to physical disabilities or medical illnesses), which is suggested to be a stronger predictor of depression than episodic stressors (Hammen, 2005).

The majority of research examining the relationship between stress and depression, have consistently find a link between the individuals experience of particular stressful life events and depression onset (Ingram & Luxton, 2005). Although data convincingly shows that stress plays a role in depression, only 50% of individuals who experience a significant

stressful life event will show evidence of depression. This shows that although it plays a crucial role, stress is not the only factor involved in the development of depression (Ingram & Luxton, 2005).

Cognitive theories of depression have become increasingly popular as means to interpret and understand the development, maintenance and etiology of depression. Most cognitive theories for depression share the common hypothesis that how an individual remembers and interprets negative life events determines how they experience depression (Lakdawalla, Hankin, & Mermelstein, 2007). Various studies have investigated the etiology of depression, with a focus on four main cognitive theories of depression: the hopelessness theory (Abramson, et al., 2002; Ingram & Luxton, 2005), the stress and coping theory (Choi & Bohman, 2007), the cognitive theory (Beck, 1987) and the response styles theory (Nolen-Hoeksema & Morrow, 1991). These four theories each identify particular sets of cognitive risk factors (such as, ruminative response style, negative cognitive style and dysfunctional attitudes) which are hypothesized to contribute to depression etiology (Lakdawalla, Hankin, & Mermelstein, 2007). Historically, cognitive theories have received a great amount of theoretical and empirical attention, offering overall support for the importance of cognition and its role in depression among older adults (Abramson et al., 2002; Ingram et al., 1998; Lakadawalla, Hankin, & Mermelstein, 2007). Given the prominence of cognitive theories for understanding depression and depressive symptomology, it is interesting to note that the knowledge surrounding depression among older adults has not been as widely reviewed (Lakdawalla, Hankin, & Mermelstein, 2007).

The hopelessness theory states that people who are frequently exposed to negative events will begin to attribute such events to stable (cannot be changed) and global (affecting their whole life) causes, inferring that any negative event that occurs is inescapable, thus a sense of hopelessness (Robinson & Alloy, 2009). It states that certain people demonstrate a

stronger negative response style, and when they are presented with negative events, they are more likely to experience depression or depressive symptoms. These individuals are thought to be more likely to experience hopelessness when they are faced with a negative event than people who do not display this negative processing bias (Robinson & Alloy, 2009).

It has been suggested that the combination of negative response styles and the negative ruminating tendencies following stressful life events predicts higher episodes of depression (Robinson & Alloy, 2009). Research has found that hopeless thoughts and suicidal ideations are prevalent in older populations (Uncapher, Gallagher-Thompson, Osgood, & Bongar, 1998). This hopelessness is often mistakenly interpreted as a normal response to the multiple losses in later life, compared to younger adults, in which hopelessness is viewed as a manifestation of distortions in cognitive processing (Uncapher, Gallagher-Thompson, Osgood, & Bongar, 1998). The hopelessness theory suggests that the older population are more likely to ruminate on negative events and internalise the negative life events due to the prevalent hopeless thoughts found among older adults.

The hopelessness theory can be used to explain aspects of the development of depression, but it does not take into consideration biological, physiological and psychological factors that can also contribute to the development of depression. There is also no explanation included in the model as to why certain people do not develop this negative processing bias, nor the fact that some people have protective factors that stops them developing depression even during adverse life events.

Alternatively, theories looking into chronic stress such as, the stress and coping theory, suggest people may become emotionally habituated to chronic stressors, and that individuals learn to deal with the stress of their particular conditions (Choi & Bohman, 2007). It is thought that people who have had long term illnesses or disabilities become physically and emotionally accustomed to coping with the condition, therefore they are less likely to

develop depression (Choi & Bohman, 2007). However the stress and coping theory is not a heavily supported theory of depression, as it does not take into account the individual responses to stress (Choi & Bohman, 2007). Individuals can vary greatly in their appraisal of stress and their coping responses depending on what potential protective factors they possess for example their social, environmental, genetic, cognitive and psychological resources (Munroe & Simons, 1991).

Cognitive Theory was first proposed by Beck (1987) and is now among the most prominent theories for describing the development of depression through various psychological processes. Cognitive Theory (illustrated in Figure 1) proposes that aversive life experiences and biological vulnerabilities which lead to the occurrence of depressive thoughts called schema (Beck, 1987). Biological vulnerability can include maladaptive attitudes linking to matters of loss, failure, inadequacy and worthlessness, and these stressors can activate the depressive schemas. When depressive schemas are activated, they lead to an information processing bias, which in turn causes them to focus more on the negative stimuli and interpret information in negative way. They will also stop attending to or disregard positive experiences that do not align with the negative schema (Blazer, 2003). According to Cognitive Theory the stress associated with managing chronic illnesses and disabilities that are common with age would increase the risk for late life depression.

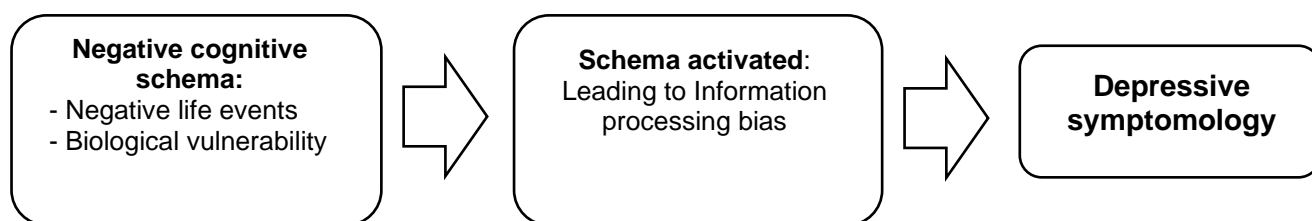


Figure 1. Diagram representing the Cognitive theory for depression as proposed by Beck (1987).

Blazer (2003) stresses, the fact that older adults have a significantly higher biological vulnerability than the general adult population, with normal age-related changes along with brain changes that are linked to age-related diseases, have shown a connection to the development of depressive symptoms. One example is, cerebrovascular risk factors and diseases (e.g. heart disease, vascular dementia and hypertension) which, have been associated with various structural brain changes, such as damage to the frontal cortex, and white matter hyperintensities which have been connected to the onset of depressive symptoms (Steffens & Potter, 2008). Biological etiological factors provide some explanation as to why older adults tend to report more cognitive symptoms (e.g. difficulties concentrating, episodic memory complaints, language and visuospatial problems) than younger adults (Beck, 2008; Blazer, 2003; Steffens & Potter, 2008).

Additionally older adults have been shown to be more vulnerable to certain negative life experiences, which are all experienced either exclusively or are more common within the older population, such as relocation to live closer to family or into supported care, loss of social roles (retirement), bereavement, functional impairment and ageism which all may contribute to the negative schemas formation and activation (Beck, 1987). Although Beck's cognitive model is a well established theory of depression it does not explain the different types of risk factors that lead to the negative schema, it also does not take into account protective factors that older adults have developed. It has been suggested that the reason why a large proportion of older adults do not have depression (and show lower severity in symptoms than younger adults) despite prevalent environmental and biological stressors associated with ageing, is because protective factors act to buffer the negative cognitive schema (Beck, 1987, Blazer, 2002).

The response styles theory states, that the duration and severity of an individuals depressive symptoms is determined by how that individual responds to their symptoms. The

response styles theory proposes three key response styles (rumination, problem solving, and distraction). The first response style, rumination is said to increase the likelihood of depressive symptoms developing while the other two response styles, problem solving and distraction are meant to decrease the chances of depression (Hilt, McLaughlin, & Nolen-Hoeksema, 2010). Rumination comprises of behaviours and thoughts that focus an individuals attention towards internal negative feelings which in turn, prolongs and intensifies their symptoms of depression. Nolen-Hoeksema (1991) outlined three main systems that describe how these different response styles, (predominantly rumination), can impact the manifestation of depressive symptoms. First, an individuals depressed mood has an effect on their thinking and information processing, this then sequentially contributes to a prolonged depressed mood (Bower, 1981). Rumination acts to increase the availability and the recollection of negative life events, which leads to stronger negative interpretations of events and behaviours that cause individuals to lose their sense of control over the outcomes. Second, rumination has been shown to interfere with instrumental behaviour. Where by, people who frequently ruminate are not as likely to participate in positive reinforcement, and behaviours that provide a sense of control (Lakdawalla, Hankin, & Mermelstein, 2007). Finally, rumination influences effective problem solving. Rumination makes negative cognitions more prominent which can impede on positive behaviours. There has been evidence to show that ruminators have difficulty problem solving and generating solutions, where they ultimately come up with less solutions and of poorer quality (Morrow & Nolen-Hoeksema, 1990).

The etiology of late life depression can be shown in the context of both protective and risk factors related to ageing (Fiske, Wetherell, & Gatz, 2009). The biopsychosocial approach recognises that these factors come in various forms (for example; factors with biological, psychological and social origins). This model looks at depression as a multifaceted

interaction between biological, psychological and social factors (Gatchel & Okifuji, 2006). There is now increasing recognition that the development and maintaining factors linked to depression is typically related to interacting processes: biological processes (age, stress, physical health), psychological processes (Rumination, negative beliefs, and cognitive vulnerability) and social processes (life events and social support) that interact over time (Gilbert, 2004).

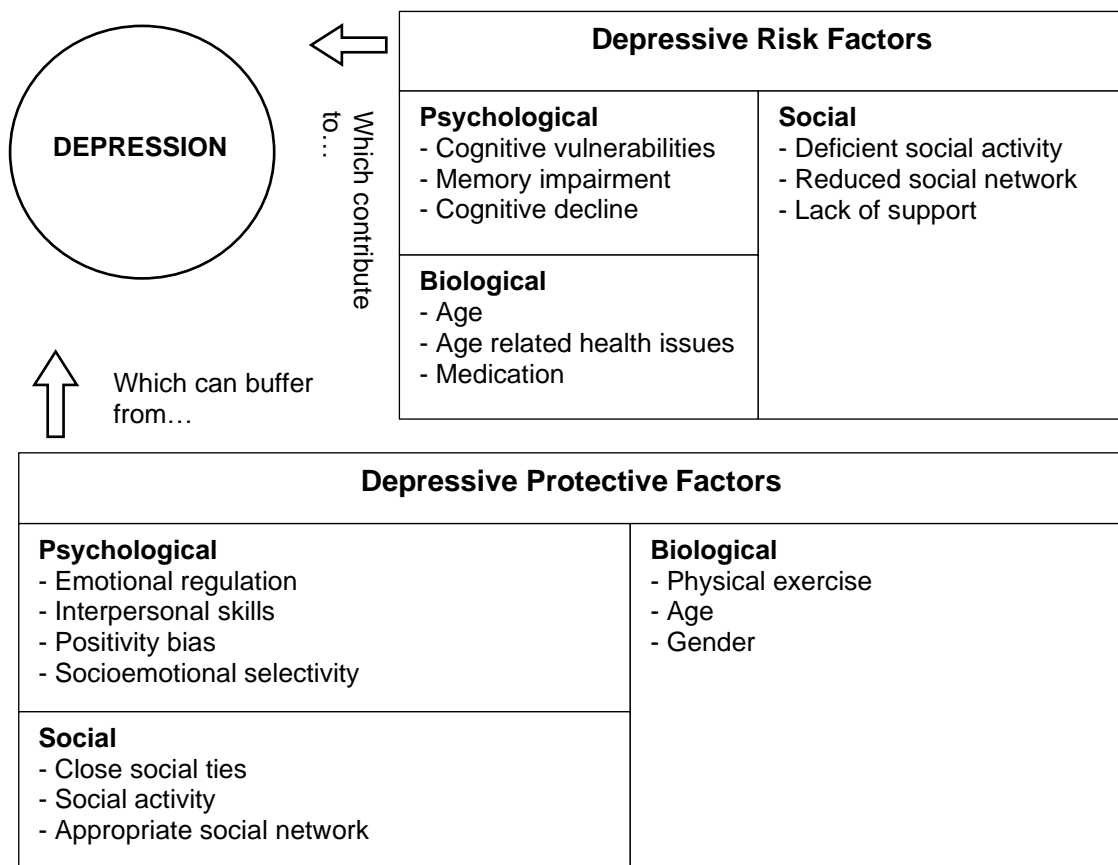


Figure 2. The Biopsychosocial model of depression, demonstrating risk and protective factors in the etiology of late life depression.

The biopsychosocial approach focuses on the multifaceted interaction of not only the risk factors that can lead to depressive symptomology but also the protective factors that can act as a buffer. This interaction between both protective and risk factors can be seen in figure 2. All of the risk factors are linked together as they can affect each other, for example a

biological factor such as chronic stress can then affect how that individual engages in social activities, this makes them more vulnerable to stressors. The current study will be using the biopsychosocial model as a framework for understanding how chronic stress and physical activity play a part in depression. Poor physical health (which maybe experienced as a chronic stressor) is considered a biological risk factor within the biopsychosocial approach, it has a negative contribution to depression while physical activity is a biological protective factor that has a positive buffering impact on depression. The risk and protective factors of the biopsychosocial model will be discussed further in section 2.5 and 2.7.

2.5 Depression Risk factors

The biopsychosocial model acknowledges both risk and protective factors associated with ageing as being equally essential when understanding depression among older adults (Fiske, Wetherell, & Gatz, 2009). Moreover, the biopsychosocial approach has recognised that these factors can occur in various forms (i.e. biological, psychological and social forms) (Fiske et al., 2009). There are various forms of biological, psychological and social risk factors that have shown an increased risk for depression among older adults, these include physical illnesses, bereavement, loneliness and functional impairment. The biological vulnerabilities and aversive events which occur later in life, also contribute to the development of depression.

Djernes (2006) conducted a review of the most significant predictors of late life depression. They found that functional impairment, widowhood, lost or limited social contacts, stressful life events, low income, history of depression, low educational level, lack of social networks, dissatisfaction with social networks, and use of depressiogenic medications were all significant predictors of depression (Djernes, 2006). Researchers have also identified risk factors such as being unmarried, living alone, poor lifestyle behaviours,

sleep disturbance and involuntary retirement, which are all considered significant predictors of depression within the older population (Djernes, 2006; Fiske, Wetherell, & Gatz, 2009).

Generally, studies have reported no significant relationship between depression among older adults and ethnicity, although some studies in America have reported higher prevalence rates among African-Americans in comparison to Hispanics and Caucasian Americans (Blazer & Hybels, 2009; Djernes, 2006, Weyerer et al., 2008). Depression prevalence estimates in New Zealand, were similar between non-Māori and Māori (Wells, et al., 2006).

Although there is little evidence supporting an ethnicity difference with depression, studies have found a gender difference, showing that adult females are at a significantly higher risk compared to their male counterparts (Djernes, 2006; Luppá, et al., 2012). This gender difference is shown across many ethnicities and cultures, where women are generally around two times as likely develop depression compared to men (Nolen-Hoeksema, 2001). The gender differences in depression appear to go beyond the prevalence rates, where they also show differences in the symptom profile, impairment, severity, distress/suffering, coping, prescribed treatments and help-seeking (Angst, et al., 2002). Although there is evidence of gender being a biological risk factor for depression among older adults, it is not a factor that the current study will be investigating further, however it will be controlled for as a confounding factor.

Social risk factors include social engagement, loneliness and social participation. Features of older adults' social engagement, such as not participating in local organisations, not being married, and having minimal social interactions, are often noted as risk factors for depression (Blazer, 2002). Studies have shown that older adults will generally actively seek social interactions and those who do show more social engagement report greater life satisfaction (Blazer, 2002). It has also been suggested that older adults who are more socially

isolated are at a greater risk of depression compared to older adults that are more socially integrated (Blazer, 2002; Jeon, Amidfar & Kim, 2017).

Interestingly, research has also shown that those who predominately only interact with their family have been shown to be at a higher risk of developing depression compared to older adults who interact more with friends and their non-family social connections (Chao, 2011; Doubova et al., 2010; Litwin & Shiovitz-Ezra, 2010). Research has suggested that family social ties is irrelevant when looking at predictors of depression compared to non-family social connections. This contradicts the idea that family connections are essential to the well-being of older adults. For older adults, families tend to provide the most support during illness, the most help with daily living activities, and the most social contact (Wenger, 1991). This relationship between social engagement and depression is already an established finding and will be controlled for in the current study. Among the many risk factors that are found to be associated with depression, the current study will focus on physical health.

2.6 Physical Health

There is established literature linking life stressors and depression to many physical illnesses such as, diabetes, coronary heart disease, disability and other chronic conditions (Steptoe, Deaton, & Stone, 2015). Stressful life events associated with older age include cognitive decline, medical illnesses common with age, as well as social stresses such as losing a partner or close friend. Despite the increase in stressful life events with old age, most older adults experience good life satisfaction, especially if they are not affected by excessive physical illness and functional incapacity (Blazer & Hybels, 2009). Even so, depression significantly reduces their quality of life and is the most common cause of emotional suffering among the older population (Blazer & Hybels, 2009). Studies have shown that patients with depression have the lowest health-related quality of life (HRQoL) scores

compared to many other medical conditions, lower than severe physical illnesses such as gastrointestinal disorders or cardiopulmonary disease (Elliot, Renier, & Palcher, 2003).

Definitions of stress encompass multiple components, however in general, stress can be defined by a few broad categories. One category of stress is based on significant negative life events, (e.g. bereavement and job loss) (Ingram & Luxton, 2005). Another category of stress is the accumulation of minor events or hassles, (e.g. dysfunctional family, unhappy marriage or a bad job). Stress has also been linked to socioeconomic factors, where situations such as low education status, low income and unstable employment, may reflect stressful living circumstances (Ingram & Luxton, 2005).

Physical health issues and disabilities that are increasingly common with older age, have been found to be associated with depression, and cognitive impairment among older adults (Geerlings, Beekman, Deeg, & Van Tilburg, 2000; Kim, et al., 2005). However, the causal pathways between physical health and depression have not been clearly defined, for example does the stress associated with being depressed contribute to the onset of the physical illness or is it the negative aspects associated with having a physical illness that leads to the onset of depression (Frerichs, Aneshensel, Yokopenic, & Clark, 1982). Some medication prescribed for common physical ailments developed with age may trigger despondency and can lead to more depressive symptoms (Wasserman, 2011). Poor physical health can also have an impact on the individual's lifestyle, (e.g. reducing physical activity and social interactions) and there is growing evidence that suggests that these behaviours, especially inactivity, strongly contribute to the development of depression, additionally, lifestyle behavioural changes have been shown to be more difficult for those with depression (Benedetto, et al., 2014).

There is considerable literature linking specific health conditions to depression. Studies have shown that medical outpatients have reported significantly higher depression

rates, particularly patients diagnosed heart diseases (Djernes, 2006). For example, around half of older adults with cardiovascular disease have also reported significant depressive symptoms (Fiske, Wetherell, & Gatz, 2009). There is a wide range in severity of medical illnesses, from mild illnesses to life threatening disorders, however, it has been shown that chronic diseases regardless of severity have been associated with depression (Sullivan, LaCroix, Russo, & Walker, 2001). It has also been shown that those with a chronic health condition, accompanied by depression have poorer overall outcomes (Benedetto, et al., 2014).

Depression is not only associated with poor physical health, but it is also linked to poorer health outcomes, lower quality of life and higher likelihood of suicide, especially among those who live alone (Domenech-Abella, 2018; Rubin, Parrish, & Miyawaki, 2018). Depression is said to have a bidirectional relationship with many ailments typical to old age. For example, depression is a frequent and important contributing cause of weight loss in late life, while frailty, leading to significant weight loss, can in turn contribute to clinically significant depressive symptoms (Blazer & Hybels, 2009). Some researchers have tried to explain this bidirectional relationship by suggesting that physical disabilities tend to lead to a greater occurrence of negative life events, which in turn increases the risk for depression; restricted social and leisure activities secondary to physical disability; and the isolation and reduced quality of social support often inherent in physical disability (Blazer & Hybels, 2009).

There is also the concern when diagnosing depression, of the possibility that physical ailments and problems common among older adults might cause people to report higher somatic symptoms, which is a major component on scales of depression (Berkman, et al., 1986). Clinicians have suggested that symptoms of depression are often overshadowed by the presence of common afflictions, such as: severe tiredness, headaches, muscle aches, dizziness, shortness of breath, bowel, joint, stomach, spine and heart problems such as

palpitations (Wasserman, 2011). These ailments are common with age but can also make it difficult for a health professional to recognise signs of depression. Some of the common symptoms of depression among older adults include; weight loss, insomnia, marked anxiety and unjustified worry (Wasserman, 2011).

The inclusion of physical health and its relationship with depression in the current study fits with the biopsychosocial approach to depression. Chronic stress (which has been operationalised as poor physical health in the current study) has been found to have a significant relationship with depression among older adults as a biological risk factor (shown in the biopsychosocial model, Figure 2). The current study will examine how physical activity as a protective factor can potentially moderate the relationship between physical health and depression.

2.7 Protective Factors for depression

Majority of the current research regarding depression has centred around the risk factors that are shown to lead to the development of depressive symptoms (Fiske, Wetherell, & Gatz, 2009). Despite the many risk factors associated with depression, only one in six people develop the condition. The biopsychosocial approach has identified that there are both risk and protective factors for depression, where the protective factors can act as a buffer against depression. These protective factors explain why an individual may experience some of the typical depression risk factors, but not develop depression. Identifying these protective factors can help in developing public health policies and general interventions to prevent the development of depression or minimise the severity of the disorder.

Considering the complexity behind identifying risk factors for depression among older adults, it is also worth investigating the importance of protective factors. Current diagnostic criteria for depression are less recognized by the older population, and require a judgement to be made, to ensure that symptoms are not attributed to a recent bereavement or the

effects from a certain medication or general medical condition (Fiske, Wetherell, & Gatz, 2009). Many of the risk factors of depression such as physical illness, loss of a loved one, and reduced social connections all increase in frequency with age, yet not all older adults become depressed. For these reasons it is important to understand the development of depression among older adults as an interaction between risk factors, including age-associated neurobiological changes and genetic factors, and protective factors that buffer the effects of these vulnerabilities (Fiske, Wetherell, & Gatz, 2009).

Numerous amounts of research has been conducted investigating social and psychological protective factors which have been shown to act as buffer against symptoms of depression in the context of biological risks and stressful life events (Fiske, Wetherell, & Gatz, 2009). In a review conducted by Hendrie et al., (2006) three key themes emerged, firstly, the importance of cognitive function, health and economic living standards; secondly, the idea that older adults can use their life experiences to teach them ways of using social support and psychological strategies to manage and control their health related stress; and lastly, the importance of meaningful social engagement, for example, religion, or volunteer work. Some psychological protective factors that have been shown among older adults include, better emotional regulation, less reactivity to stressors and engaging in cognitive strategies.

Improved emotional regulation with age seems to be an important factor for protecting older adults against depressive symptoms. Older adults appear to show lower emotional distress, suggesting that experiencing emotional distress declines with age (Charles, Reynolds, & Gatz, 2001). Older adults have also been found to show less reactivity to stressors compare to younger adults, especially those of an interpersonal nature. Older adults, when compared to younger adults with similar chronic health condition, frequently report better affect and demonstrate less reactivity to everyday stress. Similarly, when

completing a cognitive challenge task, younger adults' experienced greater affective reactivity than older adults (Charles, Reynolds, & Gats, 2001). Older adults have been suggested to have better emotional regulation where they tend to focus more on emotionally meaningful and positive experiences relative to younger adults (Carstensen, Fung, & Charles, 2003).

Social support has been found to act as a protective factor against stressful life events within in the older population. This can help by encouraging people to participate in meaningful forms of social activities. As discussed above, the lack of social engagement is considered a risk factor for depression, while the reverse of engaging in appropriate social engagement can act as a buffer against depression.

Protective factors, thought to reduce the effects of depression among older adults has received less attention, however, there has been work which has examined stress reduction strategies and physical exercise. Health engagement control strategies, which is when one engages in active behaviours to reduced levels of depressive symptoms, also acts to reduce the secretion of cortisol, a common stress hormone (Wrosch, Schulz, Miller, Lupien, & Dunne, 2007).

2.8 Physical Activity

With advancing age, functional and structural deterioration becomes increasingly more commonly within physiological systems, even in the absence of physical illnesses (Chodzko-Zajko, et al., 2009). The physiological changes with age can impact on daily living activities and have a major impact on physical independence in older adults (Chodzko-Zajko, et al., 2009; Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991). Older adults generally engage in less physically active relative to young adults, although the total time spent per day completing lifestyle physical activities, is similar to that of younger active adults (Dinas, Koutedakis, & Flouris, 2011). In recent years there has been increasing evidence that

supports physical activity as a practical intervention for increasing one's quality of life (Rejeski & Mihanlko, 2001).

Research looking at quality of life has increased over the past 15 years, which has become population for researchers looking at older populations (Rejeski & Mihanlko, 2001). Quality of Life has been defined as a personal judgement of overall satisfaction with one's life (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991). Recent research has investigated the impacts of physical activity on quality of life and overall psychological well-being (Rejeski & Mihanlko, 2001).

Regular moderate physical activity (brisk walking, gardening and cycling) have been shown to play an essential role in the prevention of disease and promotion of good health (Booth, Owen, Bauman, Clavisi, & Leslie, 2000). Participating in regular physical activity has been linked with improved physical and psychological wellbeing along with improved functional capacity among the older population (Chodzko-Zajko, et al., 2009). Recent evidence indicates that, low activity levels is a risk factor for functional decline, among older adults, and that physical activity and physical fitness are shown as protective effect (Booth, Owen, Bauman, Clavisi, & Leslie, 2000; Gregg, Pereira, & Caspersen, 2000). There has been an increase in the amount of research looking at longevity among older adults with a focus on how to reduce impairments and improve physical health (Rejeski & Mihanlko, 2001).

A substantial amount of new evidence has been found regarding the benefits of older adults engaging in regular exercise and moderate levels of physical activity (Chodzko-Zajko, et al., 2009). Researchers have found that regular physical activity has been linked to significant improvements to the overall quality of life especially among older adults (Drewnowski & Evans, 2001). There is a growing body of research supporting the recommendation of physical exercise and activity for older adults with chronic disabilities and diseases (Chodzko-Zajko, et al., 2009). Physical activity has also been recognized as a

key lifestyle factor for older adults that is associated with a reduced risk of fractures and falls (Gregg, Pereira, & Caspersen, 2000). It is also indicated to help with physical functioning, bone mineral density, maintaining mobility, muscle strength and balance (Gregg, Pereira, & Caspersen, 2000).

In recent decades it has become generally accepted that there are various mental health benefits associated with regular physical activity (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991). It has been suggested that strenuous exercise leads to increased epinephrine and norepinephrine synthesis, release of endorphins and increased cortical blood flow (Rejeski & Mihanko, 2001). There are many testimonies from joggers and runners as to the improved mood, or even euphoria that immediately follows cardio exercise, which can continue for several hours afterwards (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991). Physical exercise other associated benefits such as, release of anger and reduced emotional strain, which serve as a buffer against stressful events (Laurin, Verreault, & Lindsay, 2001).

While physical activity has been proven to have various health benefits, the absence of physical activity has also been proven to have negative effects on ones' overall health and wellbeing (Strohle, 2009). Studies investigating the effects of physical activity have identified that the lack of physical activity can have the reverse effect and may be associated to the development of certain mental disorders like depression (Strohle, 2009). Encouraging evidence has found that moderate physical activity and regular exercise can have beneficial effects on depressive symptoms, which are often comparable to those of antidepressants (Dinas, Koutedakis, & Flouris, 2011). The endorphin hypothesis suggests that exercise alters endorphin secretion which leads to a reduction in anxiety and depression levels (Dinas, Koutedakis, & Flouris, 2011). Physical activity has been suggested to delay cognitive loss and impairment, it has also been shown that physical fitness interventions have beneficial

effects on memory and other aspects of cognition among older adults (Laurin, Verreault, & Lindsay, 2001).

Depression has been frequently linked with symptoms which show a clear reduction in an individuals' cognitive abilities, which in turn is frequently related to a reduction in physical and social and activity, especially among older adults (Teixeira, Vasconcelos-Raposo, Fernandes, & Brustad, 2013). Studies have frequently reported the relationship between depression and physical activity, where individuals who engage in higher amounts of physical activity report lower incidences of depressive symptoms (Teixeira, Vasconcelos-Raposo, Fernandes, & Brustad, 2013). It has also been argued to bring more benefits such as fitness, social relationships and overall wellness. Recent studies have begun to include physical activity as a therapeutic intervention, because of these benefits (Teixeira, Vasconcelos-Raposo, Fernandes, & Brustad, 2013). These protective or buffering effects of physical activity on depression means it is an ideal target behaviour for intervention and to moderate the effects of depression among older adults.

Research has established that the behavioural choices that older adults make have a major impact on their health and wellbeing, especially those with health conditions (Potempa, Butterworth, Flaherty-Robb, & Gaynor, 2010). Many studies have found that social support and health-enhancing behaviours, like physical activity have a protective or buffering effect against late life depression (Choi & Bohman, 2007). In addition to this, there is evidence supporting the importance of physical activity and exercise for older adults with chronic disabilities and diseases (Chodzko-Zajko, et al., 2009).

Participating in regular moderate physical activity can provide both psychological and physical health benefits (Patel, Schofield, Kolt, & Keogh, 2011). There has been an increase in focus towards the psychological benefits of engaging in physical activity, particularly when examining the management and treatment of depression. New Zealand currently has a

high proportion of adults who remain inactive, or are not achieving the recommended amount of physical exercise which has been shown to be required for one's health and wellbeing (Sport and Recreation New Zealand: Active New Zealand survey, 2008). A 2008 survey revealed that approximately 48% of the New Zealand adult population meet the national guidelines for physical activity, with only 31% of New Zealand adults participating in some level physical activity, and 13% were inactive (Sport and Recreation New Zealand: Active New Zealand survey, 2008; Patel, Schofield, Kolt, & Keogh, 2011).

Overall previous research has shown that moderate levels of physical activity has many physiological and psychological benefits. There have been studies conducted overseas that show benefits of physical activity on individuals with depression as well as individuals with physical health issues. There is very little research on the role of physical activity and physical health on depression in older adults in New Zealand. It remains to be investigated whether physical activity has an effect on the relationship between depression and physical health, especially in a New Zealand context.

2.9 Present Research

Research Questions

1. What is the relationship between physical health and depressive symptomatology among older New Zealand adults?
2. What is the relationship between physical activity and depressive symptomatology among older New Zealand adults?
3. Does physical activity moderate the relationship between depressive symptomatology and physical health among older New Zealand adults?

Summary and Hypotheses

1. Health will be negatively related to depressive symptoms i.e. depressive symptoms will be higher among individuals with poorer health.

As outlined in section 2.6 numerous studies have found a relationship between physical health and depression. Poor physical health has been suggested to be an important predictor of depression among older adults, it has been identified as a risk factor within the Biopsychosocial approach to depression. Based on the previous research, it is expected that lower physical health will be associated with higher depression scores, and this is expected to remain true even after controlling for other risk factors discussed in section 2.5.

2. Physical activity will be negatively related to depressive symptoms i.e. depressive symptoms will be lower for those who engage in more physical activity.

Previous research has found that physical activity has beneficial effect among older adults and can act as a buffer against depression (Chodzko-Zajko, et al., 2009). The Biopsychosocial approach recognises physical activity as a protective factor for depression. Based on previous research it is expected that physical activity will be negatively related to depressive symptomatology, with lower activity levels associated with higher depression scores (Drewnowski & Evans, 2001).

2B: Physical activity will moderate the relationship between stress and depressive symptoms i.e. the relationship between poorer physical health and depression will be weaker for those who engage in more physical activity.

Current theoretical understandings as outlined in section 2.8 suggests that physical activity could protect against depression (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991). Given that few studies have examined the relationship between depression, physical health and physical activity among older adults the current hypothesis is based on the biopsychosocial approach that incorporates protective and risk factors for depression

(Steffens & Potter, 2008). Therefore, it is expected that physical activity will moderate the relationship between poor physical health and depressive symptoms.

In sum, the aim of this study is to explore the relationship between stress and depression among older New Zealand adults, and how positive health behaviours can moderate this relationship. This study will be focusing on the effects of poor physical health on depressive symptoms in older adults and whether physical activity has a moderating effect on this relationship (see figure 3). Understanding the relationship between depression and health behaviours will help with long term health among older adults. Determining potential risk and protective factors for depression among the ageing population is beneficial for determining public health policies, giving evidence to physical activity as an intervention method and furthering our understanding of depression among older adults.

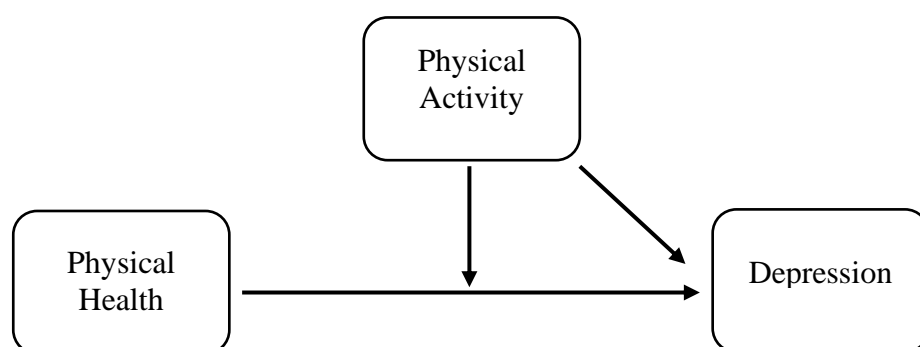


Figure 3. Pictorial representation of the relationship between Physical Health and Depression, with Physical Activities moderating effect.

Chapter 3: Method

3.1 Research Design

The pre-existing data

The current study utilised secondary data from the New Zealand Health, Work and Retirement Study (HWR). The HWR is a longitudinal study of ageing conducted by Massey University's Health and Ageing Research Team (HART). The HWR study aims to investigate factors associated with work, retirement and healthy ageing among New Zealand older adults.

Funding for the Health, Work and Retirement study has been provided by the Health Research Council of New Zealand (HRC05/311), The Foundation for Research Science and Technology (MAUX0606), Ministry of Science, and Innovation (MAUX1205), and the Ministry of Business, Innovation and Employment (MAUX1403, MAUX1705, MAUX1506).

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A, Application 18/34.

Participants

The HWR study commenced in 2006, selecting participants aged 55 or older randomly from the New Zealand electoral roll. The original cohort included 6,662 participants, around 46% of those responded when re-approached for participation in the longitudinal study. New participants were recruited at subsequent waves as refresh samples to maintain sample size and representativeness. The original sample and refresh samples included an over-sampling of individuals listed as being of Māori descent on the electoral roll, in order to adequately represent Māori New Zealanders within the community. Data collection has been conducted by postal survey on a biennial basis. The 2018 postal survey represents the 12 year follow up of the original cohort recruited in 2006. More information on the study and its methodology can be found in Allen, Alpass, & Stephens, (2019).

3.2 Measures

The current study investigated depression, physical health and physical activity, as the dependent, independent and moderating variables. Socioeconomic status and anxiety, along with other demographic variables were used as control variables. Measures are described below and provided in Appendix A

Depression

Depression was operationalised using the 10-item version of the Centre for Epidemiological Studies Depression Scale (CES-D 10). This is not a diagnostic tool for depression but rather can be used as a screening tool to indicate if participants meet certain criteria for a depressive disorder (Irwin, Artin, & Oxman, 1999).

The CES-D is a self-report depression screening scale, which was originally designed to be used within research settings, it has now become increasingly popular as a tool for clinicians, to screen patients for depression (Henry, Grant, & Cropsey, 2018). The CES-D was developed in 1977 and was drawn from the diagnostic criteria listed in the DSM-II (Henry, Grant, & Cropsey, 2018). The CES-D scale allows participants to self-rate their degree of experience using a 4-point scale (ranging from, 0 = rarely or none of the time through to 3 = all of the time) to rate the frequency of which they had felt a particular way (for example, “hopeful about the future” or “lonely”) throughout the previous week (Tomitaka, et al., 2018). The participants total score is determined by summing all item scores (which range from 0–30). Scores that are equal to or above 10 were considered indicative of depression. The measure has good reliability with Cronbach’s alpha .86, it also correlates ($r = .79$) with the SF-12 mental health component indicating construct validity (Miller, Anton, & Townson, 2008).

Physical Health

The 12 item Short Form Health Survey (SF-12) was originally developed as a shorter version of the SF-36 health survey. The developers constructed a shorter health survey which includes a Physical Component Summary (PCS) and a Mental Component Summary (MCS) Scale Score without losing essential information from the original 36 items (Jenkinson, et al., 1997). The SF-12 is more commonly used when looking to provide summary information on physical and mental health status, as it is quicker to administer and less burdensome to the participants (Jenkinson, et al., 1997). This scale is a widely used and validated short-form measure of self-reported generic and functional health, which has been shown to be valid for use among older people (Lyons, Perry, & Littlepage, 1994).

The SF-12 is used to assess health and well-being in eight key domains (ie role functioning, physical functioning, vitality, bodily pain, general health, mental health and social functioning). The participants are asked questions regarding their physical health (e.g. Does your health limit you in moderate activities) the scores varied from (yes, limited a lot) through to (no, not limited at all). The SF-12 physical and mental health component scores have been shown to be sensitive to adverse physical (Jenkinson et al, 2001; Johnson and Coons, 1998; Johnson and Pickard, 2000) and mental health states (Silveira et al, 2005; Gill et al, 2007; Vilagut et al, 2013) across a range of general population contexts.

Scores can be merged into a composite summary, capturing both physical wellbeing (PCS) and mental wellbeing (MCS) (Sanderson & Andrews, 2002). The PCS scores were calculated utilising baseline subscale scores which were derived from the New Zealand General Social Survey 2008, as well as the factor score coefficients which were derived from the New Zealand Health Survey 2006-07 (Frieling, Davis, & Chiang, 2013). Higher scores indicate better health-related quality of life. For the purpose of the current study the PCS scores were used as a measure of physical health.

Physical Activity

Physical activity was measured using items from the English Longitudinal Study of Ageing (ELSA) which assesses participation in vigorous, moderate and mild exercise. Based on previous research, moderate intensity exercise has a key role in the promotion of good health in older adults, therefore the item measuring moderate physical exercise was used in the current study (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991). This item asked participants 'How often do you take part in sports or activities that are moderately energetic (e.g. gardening, brisk walking). The item was measured using a 4-point scale, ranging from (More than once a week) to (Hardly ever or never). The item was reversed for the analysis so that higher scores represented a higher engagement in moderate physical activity.

Descriptive and control variables

Anxiety

Research has shown that there is a high comorbidity between anxiety and depression (Berkman, et al., 1986), which could confound the relationships between physical health, depression and physical activity. Therefore, the current study controlled for anxiety using the General Anxiety Inventory (GAI). The GAI is a 20-item self-report scale which is used to measure anxiety among older adults, with higher scores indicating increased anxiety symptoms (Pachana, McLaughlin, Leung, Byrne, & Dobson, 2011). The GAI was intended to be reasonably short to minimise fatigue. The scale uses a dichotomous response format, which makes it simpler to use in relation to somatic symptoms and cognitive impairment to reduce the potential overlap with the symptoms associated with any general medical conditions (Pachana, McLaughlin, Leung, Byrne, & Dobson, 2011). The GAI has good sensitivity and has excellent test-retest reliability ($r = .93$ and $.1$) (Pachana, et al., 2007). In the current study the Cronbach's alpha coefficient was $.85$.

The HWR survey used the shortened form of the GAI, using five items (Bryne & Pachana, 2011), where the participants are asked, “indicate ‘agree’ if you mostly agree that the item describes you or indicate ‘disagree’ if you mostly disagree that the item describes you”. GAI included items such as ‘I worry a lot of the time’ and ‘I often feel nervous’ to assess the participants level of anxiety. For the current study the scores were reverse coded, to show those with higher scores indicating higher levels of anxiety.

A variety of demographic variables were also seen to potentially confound the relationship between depression and physical health. The present study therefore controlled for age, gender, marital status, ethnicity, work status, socioeconomic status, and occupation. Table 1 outlines how these were measured.

Table 1.

NZHWR survey item descriptions for demographic and health related variables

| Construct | Item description (<i>scoring method</i>) |
|--------------------------|--|
| Age | DOB |
| Gender | Male; Female; Gender diverse |
| Ethnicity | NZ European, Māori, Pacific Peoples, Asian and other |
| Marital status | Married; Civil union/de facto/partnered relationship; Divorced or permanently separated; Widow or widower; Single |
| Education status | No qualifications; Secondary school; Post-secondary/trade; Tertiary |
| Employment | Full-time paid employment, including self-employment; Part-time paid work, including self-employment; Retired, no paid work; Unemployed and seeking work; Other/Full-time student/unable to work due to health or disability |
| Occupation | Profession (manager/professional); Non-professional |
| Economic living standard | ELSI-SF – Economic Living Standards Index – Short Form |
| Anxiety | GAI – General Anxiety Inventory |

Economic Living Standards Index – Short Form

The Economic Living Standards Index – Short Form (ELSI-SF) is a self-reported scale derived from the Ministry of Social Development's ELSI scale (Jensen, Spittal, & Krishnan, 2005). The ELSI-SF acknowledges that economic living standards should be viewed as a continuum ranging from low to high which can impact on an individual's ability to participate in social activities and socialise.

The ELSI-SF consists of 25 items which assess material ownership, restriction in social participation as well as economic restrictions. Items include questions regarding access to common items (for example, washing machine, telephone, at least two pairs of good shoes, suitable clothes for important or special occasions, home contents insurance, personal computer, and enough room for family/whanau to stay the night). Whether you do certain activities (for example, heat the main rooms adequately, give presents to family, visit the hairdresser, have holidays away from home and inviting friends over for a meal), if you do certain things to keep costs down (for example, cut back on fruit and vegetables, not replace worn out clothes, postpone doctors' visits, and spent less time on hobbies). Other questions that are included in the ELSI-SF include; how you rate your material standard of living (high, fairly high, medium, fairly low or low), along with are you satisfied with your current material living standard (very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied or very dissatisfied) and does your income meet your everyday needs (not enough, just enough, enough or more than enough).

A total score is generated from summing all items (range 0–31), with higher scores indicating better economic and financial well-being. A scoring algorithm can also be used to categorise responses into either: Hardship, comfortable and good. Jensen, Spittal, and Krishnan (2005) reported a Cronbach's alpha of .88 for the Economic Standard, Short Form scale. In the current study, the Cronbach's Alpha coefficient was .81

3.3 Procedure

The current study used the data drawn from the 2018 wave of the HWR study. The participants in this data wave were made up of existing participants from the longitudinal cohort and those recruited for the refresh sample. Data was collected by postal survey following Dillman's (2000) five stage tailored design method recommended for large scale postal surveys (Dillman, 2000). Dillman's (2000) approach consists of a number of separate contact points to get the highest number of responses possible. Firstly, a letter was sent to all participants who met the criteria, informing them of their random selection from the Electoral Roll for the HWR survey, and that the survey would be mailed soon. The questionnaire was sent to the participants one week later, which included a free post envelope and a cover letter about the study. Three weeks later all participants were sent a reminder post card. A replacement questionnaire was sent to all participants six weeks later followed by a final reminder eleven weeks later, for those who did not respond (Allen, 2017).

Existing cohort. Of the existing participants surveyed in 2018 $n = 3364/4368$, (77.01%) returned completed surveys. The response rate for those not indicated as being of Māori descent $n = 2186/4368$, (81.4%) was higher than the response rate for persons indicated as being of Māori descent $n = 1175/4368$, (69.9%). There was no significant difference between the response rate for men $n = 1478/4368$, (76.0%) and women $n = 1886/4368$, (78.0%).

2018 cohort refresh. All adults on the electoral roll who were born between 11/05/1961 and 10/05/1963 (aged 55-57 in 2018) were assessed for inclusion in the study including an oversampling of individuals who indicated as being of Māori descent on the New Zealand electoral roll. Those who resided outside New Zealand and those who had responded to previous HWR survey 2006-2016 were excluded from the sample. Of the total refresh cohort $n = 598/3596$, (16.6%) returned their survey. The response rate for the general sample $n = 307/1638$, (18.7%) was 3.9% higher than that of the Māori descent oversample n

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= 291/1958, (14.9%). Overall $n = 276/1422$ (19.4%) persons of non-Māori descent and $n = 322/2174$ (14.8%) persons of Māori descent responded. The response rate for women (19.2%) was higher than men (13.8%). In total 3919 participants were included in the current study; this includes all participants who returned their surveys and answered the required questions for the measures described above.

Chapter 4: Results

4.1 Missing Data and Variable Transformations

The descriptive analysis included means and standard deviations of the untransformed variables. Missing values did not exceed 5% on any of the variables (Tabachnick & Fidell, 2007) and listwise deletion was employed to deal with it given the adequate sample size. All variables were initially screened for missing values, accuracy of data entry, and the assumptions of multivariate analyses through the various SPSS analytical tools as recommended by Tabachnick and Fidell (2007).

Additionally, the physical activity was reversed for easier interpretation. This meant, higher scores on the inversed physical activity variable meant more engagement in physical activity.

4.2 Data analyses

The data was analysed using SPSS for Windows Version 25.0 The analyses were conducted in separate stages which enabled statistical summaries of the procedures used along with the outcomes to be associated with the studies hypotheses.

First, descriptive analyses were conducted to examine the distribution of the sample and to determine if there was a relationship between physical health and physical activity on depressive symptomology. Gender (Female/Male), marital status (Married/Non-married), occupation (Professional/Non-Professional), work status (Full time/Part time) and ethnicity (Māori/Non-Māori) were treated as dichotomous variables, whereas age, socioeconomic status, anxiety, physical health, physical activity and depression were treated as continuous variables.

Response categories for gender included: 1 = male, 2 = female. For the marital status question, response categories were: 1 = married/defacto, 2 = not married/defacto. Response choices for occupation were categorized as 1 = professional, 2 = non-professional. Work

status was categorized as 1 = Full time / part time paid, 2 = Unpaid/Retired/ other. Ethnicity was collapsed into 1= Māori and 2 = Non-Māori. Education was collapsed into 2 categories 1= No qualification/ secondary 2 = post-secondary/trade/tertiary.

The means and standard deviations of the dichotomous variables are summarised in table 3 and Pearson correlations are shown in table 3 summarising the continuous variables. These analyses determined which variables were significantly related to the key study variables and would consequently be included in the multivariate analysis. Second, the multivariate analysis was conducted to address the hypotheses in more detail. The variables that were shown to have a significant relationship to depression in bivariate analyses were included in a 3-step hierarchical regression analysis to address each of the hypotheses. Interaction terms were generated by calculating cross-product terms between the variables, for example, either using deviation scores from the mean of continuous variables or binary coded dichotomies.

4.3 Descriptive Statistics

The demographic data from participants is summarised in Table 2. There was an even distribution of participants in the age ranges from 55-69 years, with about 30% of the sampled participants being over 70 years. Females outnumbered males by approximately 10% and over 30% of the participants were of Māori descent which is representative of the over-sampling. Approximately half of the participants were married. A large majority of the participants had completed high school or a qualification after high school. The proportion of participants who were retired was only marginally higher than those who were in full-time paid employment. Over half of the participants reported a good socio-economic status. Twenty-three percent of the participants met the criteria for clinical depression, and the majority of participants engaged in physical activity, more than once a week.

Table 2.

Descriptive statistics of demographic and health related variables (N=3964)

| Variable | Category | N Missing | % (N) |
|--------------------|------------------------|-----------|-------------|
| Age | 55-59 | 0 | 22.1 (878) |
| | 60-64 | | 22.7 (900) |
| | 65-69 | | 25.2 (1000) |
| | 70-74 | | 14.1 (557) |
| | 75-79 | | 10.6 (421) |
| | 80-84 | | 5 (199) |
| | ≥ 85 | | .3 (9) |
| Gender | Female | 0 | 56.8 (2251) |
| | Male | | 43.1 (1709) |
| | Gender diverse | | .1 (4) |
| Ethnicity | NZ European | 66 | 61.5 (2436) |
| | Māori | | 30.7 (1217) |
| | Pacific Peoples | | 1.1 (44) |
| | Asian | | 1 (41) |
| | Other | | 4 (160) |
| Marital status | Married or defacto | 80 | 71.8 (2846) |
| | Not married or defacto | | 26.2 (1038) |
| Educational status | No Qualifications | 97 | 20.2 (800) |
| | Secondary school | | 23.6 (935) |
| | Post-secondary/trade | | 32.4 (1283) |
| | Tertiary | | 21.4 (3867) |
| Employment status | Full-time paid work | 95 | 31.5 (1249) |
| | Part-time paid work | | 23.2 (918) |

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| | | | |
|--------------------------|--|-----|---------------|
| | Retired, no paid work | | 33.6 (1332) |
| | Full-time homemaker | | 3.3 (130) |
| | Unemployed and seeking work | | .7 (28) |
| | Other/full time student/unable to work due to disability | | 5.3 (212) |
| Occupation | Professional (manager/professional) | 788 | 19.9 (788) |
| | Non-professional | | 31.2 (1235) |
| Economic living standard | Hardship | 418 | 12.8 (506) |
| | Comfortable | | 18.3 (727) |
| | Good | | 58.4 (2313) |
| Depression | <10 | 42 | 76.9 (3015) |
| | >10 | | 23.1 (907) |
| Physical Activity | Hardly ever or never | 58 | 8.1 (321) |
| | One to three times a month | | 12.5 (494) |
| | Once a week | | 17.1 (672) |
| | More than once a week | | 61 (2419) |
| Physical Health | Average Physical health | 0 | 46.07 (10.53) |

4.4 Bivariate analyses

The current study examined the bivariate relationships between demographic variables and depressive symptoms using statistical tests (such as, *t*-tests, correlations and ANOVA tests). Table 4 summarises the means and standard deviations of the descriptive variables. All significant ANOVAs were followed with post hoc tests (Tukey Honest Significant Differences).

Table 3.

Means and standard deviations of descriptive variables with depression.

| Construct | Item description | Means | Standard deviations | P value |
|----------------|-----------------------------------|-------|---------------------|---------|
| Age | 55-59 | 1.25 | .43 | .037 |
| | 60-64 | 1.26 | .44 | |
| | 65-69 | 1.21 | .41 | |
| | 70-74 | 1.19 | .40 | |
| | 75-79 | 1.24 | .43 | |
| | 80-84 | 1.23 | .42 | |
| | ≥ 85 | 1.33 | .50 | |
| Gender | Male | 6.26 | 5.04 | .197 |
| | Female | 6.41 | 5.13 | |
| Ethnicity | Non-Māori | 6.03 | 4.95 | .000 |
| | Māori | 6.83 | 5.28 | |
| Marital status | Married or defacto | 5.89 | 4.76 | .000 |
| | Not married or defacto | 7.40 | 5.64 | |
| Education | No qualification & Secondary | 6.89 | 5.35 | .000 |
| | Post-secondary / trade & Tertiary | 5.82 | 4.77 | |
| Employment | Full time / part time paid work | 5.78 | 4.66 | .000 |
| | Unpaid / Retired / other | 7.01 | 5.49 | |
| Occupation | Professional | 5.07 | 4.18 | .000 |
| | Non-professional | 6.21 | 4.89 | |

There was a non-significant relationship found between depression scores and Gender, $F(2, 3919) = 1.62, p = .197$. The analyses showed that Depression scores differed by Ethnicity, $F(4, 3856) = 5.87, p = .000$, where the mean score for the Non-Māori ($M = 6.03, SD = 4.95$) was significantly different than the Māori participants ($M = 6.83, SD = 5.28$).

Depression differed by Marital status, $F(1,3847) = 68.61, p = .000$, with non-partnered participants having higher depression scores than partnered participants. Depression differed by Education level, $F(1,3832) = 42.23, p = .000$. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the No qualification / secondary group was significantly higher than Post-Secondary / trade and Tertiary group.

Depression was found to significantly differ by Employment status, $F(1,3834) = 56.49, p = .000$. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the Unpaid / retired / Other group, was statistically significantly higher than those in paid full time and part time employment ($M = 5.78, SD = 4.66$). Depression differed significantly by Occupation $F(1,2009) = 29.06, p = .000$, with non-professional participants scoring higher than profession participants.

Bivariate correlations are displayed in Table 4 showing the correlation coefficients for each of the health-related continuous variables in the current study.

Depression showed a negative relationship with age, indicating that people report lower depressive symptoms with age $r = -.033, p < .05$. Additionally, age showed a negative relationship with both physical health ($r = -.204, p < .01$) and physical activity ($r = -.056, p < .01$) indicating that people report poorer physical health and less physical activity as they get older. Depression showed a negative relationship with socioeconomic status indicating that those with higher depression scores had lower scores on the economic living standards scale. Anxiety was positively related to depression indicating that those with higher depression scores also had higher anxiety scores. Socioeconomic status showed a significant positive relationship with, physical health and physical activity this suggests that those with higher socioeconomic status had better physical health and engaged in more moderate physical activity. Anxiety showed significant negative relationships with physical health, and

physical activity indicating that individuals with higher anxiety scores had poorer physical health and engaged in less moderate physical activity.

The relationship between physical health and depression showed a negative correlation $r = -.396, p < .01$. These results provide tentative support for hypothesis one. Participant's with higher depression scores, reported poorer physical health. The connection between physical activity and depression $r = -.323, p < .01$, showed a negative relationship. This finding provides support for hypothesis two, as the results indicate that participants with higher depression scores had lower physical activity levels.

Table 4.

Bivariate analysis results examining potential control variables and their relationship to depression

| | Age | Socio economic living standards | Anxiety | Physical Health | Physical Activity | Depression |
|-----------------------|---------|---------------------------------|---------|-----------------|-------------------|------------|
| Age | 1 | .125** | -.090** | -.204** | -.056** | -.033* |
| Socio economic status | .125** | 1 | -.333** | .343** | .263** | -.492** |
| Anxiety | -.090** | -.333** | 1 | -.198** | -.193** | .610** |
| Physical Health | -.204** | .343** | -.198** | 1 | .448** | -.396** |
| Physical Activity | -.056** | .263** | -.193** | .448** | 1 | -.323** |
| Depression | -.033* | -.492** | .610** | -.396** | -.323** | 1 |

** Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

4.5 Multivariate analysis

The correlations and mean comparisons were used to determine which variables showed a significant relationship to depression and would therefore need to be controlled in

multivariate analyses. To test the hypotheses a 3-step hierarchical regression analysis was performed. Hierarchical regression was used to evaluate each independent variables' unique contribution to the dependent variable depression and the moderating effect of physical activity on the relationship between physical health and depression. The hierarchical regression analysis was chosen because it allows more control over the independent variable blocks entered and to account for the unique variance of the control variables (Tabachnick & Fidell, 2007) (see table 5). The control variables were entered at step one. The two independent variables were entered at step two to examine the main effects of, physical health and physical activity on depression. The interaction term was entered at step 3 to test the hypothesized moderating effect of physical activity on the relationship between physical health and depression.

The variables were centered and the interaction term between physical health and physical activity was created, to avoid potentially high multicollinearity with the interaction term (Aiken & West, 1991).

Table 5.

Hierarchical multiple regression analysis of physical health and physical activity on the outcome variable of depression. Standardized regression coefficients, R, R², Adjusted R² change for all subjects (N = 1835)

| <i>Predictors</i> | <i>Steps</i> | | |
|-------------------------------------|--------------|----------|----------|
| | <i>1</i> | <i>2</i> | <i>3</i> |
| <i>Control variables</i> | | | |
| Age | .037* | .001 | .000 |
| Ethnicity | -.015 | -.019 | -.019 |
| Marital status | .068*** | .059*** | .057*** |
| Occupation | .011 | .010 | .012 |
| Anxiety | .500*** | .477*** | .477*** |
| Employment | -.004 | -.020 | -.021 |
| Education | .003 | .019 | .019 |
| Socioeconomic status | -.264*** | -.204*** | -.205*** |
| <i>Independent variables</i> | | | |
| Physical health | | -.177*** | -.169*** |
| Physical activity | | -.095*** | -.092*** |
| <i>Interaction</i> | | | |
| Physical health x Physical activity | | | .034 |
| <i>R</i> | .640*** | .674*** | .675 |
| <i>R²</i> | .409*** | .454*** | .456 |
| <i>Adjusted R²</i> | .406*** | .452*** | .452 |
| <i>R² change</i> | .409*** | .045*** | .001 |

***p<.001, **p<.01, *p<.05

Model one:

When combined in a multivariate regression model, control variables accounted for a significant amount of variance in Depression, $R^2 = .41$, $F(8,1836) = 158.83$, $p < .000$.

Examining the beta coefficients, four of the control variables contributed to the variance explained in step one, age ($\beta = .037$, $p < .05$), marital status ($\beta = .068$, $p = .000$), anxiety ($\beta = .500$, $p < .000$), and socio economic status ($\beta = -.264$, $p < .000$).

Model two:

In the second step, two variables were added to model one: physical health and physical activity. These variables increased the total variance explained to 45.2% (adjusted R^2), $F(2,1834) = 76.45$, $p < .000$. Both physical health $\beta = -.177$, $t(1834) = -9.076$, $p < .000$, and physical activity $\beta = -.095$, $t(1834) = -5.021$, $p < .000$ were significant predictors of depression scores. The R squared change after the addition of physical activity and physical health variables was significant $\Delta R^2 = .045$, $p = .000$.

Model three:

In the third step, the interaction term between physical health and physical activity was added to the regression model. This interaction was not significant, $\Delta R^2 = .001$, $\Delta F(1, 1833) = 3.69$, $p = .055$, $\beta = .034$, $t(1833) = 1.922$, $p = .055$, indicating that physical activity did not moderate the relationship between physical health and depression.

Hypothesis 1: *Physical health will be negatively related to depressive symptoms i.e. depressive symptoms will be higher among individuals with poorer health.*

The initial bivariate analysis supported hypothesis one, with a negative correlation between depression and physical health. The multivariate analysis also showed a significant negative main effect between physical health and depression when controlling for covariates. This finding provides support for the hypothesis suggesting that those with higher depressive scores also had poorer physical health scores.

Hypothesis 2: *Physical activity will be negatively related to depressive symptoms i.e. depressive symptoms will be lower for those who engage in more physical activity.*

The initial bivariate analysis supported hypothesis two, with a negative correlation between depression and physical activity. The multivariate analysis also showed a significant negative main effect between physical activity and depression when controlling for covariates. This finding supports the hypothesis suggesting that those with higher depressive scores engaged in less physical activity.

Hypothesis 2B: *Physical activity will moderate the relationship between stress and depressive symptoms i.e. the relationship between poorer physical health and depression will be weaker for those who engage in more physical activity.*

The current model was not consistent with hypothesis 2B suggesting that physical activity moderates the relationship between depression and physical health. Although the current study showed significant main effects for both physical activity and physical health on depression, the interaction effect of physical activity on depression and physical health was not significant in the current sample.

Chapter 5: Discussion

The current study set out to extend our understanding of depression among older adults, with a focus on physical activity as a protective factor and physical health as a common risk factor for depression among older adults. The three main hypotheses were: 1) that physical health would be negatively related to depressive symptoms; 2) that physical activity would be negatively related to depressive symptoms; and 3) that physical activity would moderate the relationship between physical health and depressive symptoms. Results showed support for the first two hypotheses. However, the moderation effect was non-significant which suggests that physical activity did not moderate the effect of physical health on depression in this sample.

The present study builds on the current understandings of depression among older adults by: providing support for the relationship between physical health and depression and providing support for the relationships between physical activity and depressive symptoms, Finally, the current study helps contribute to our understandings of depression in later life within a New Zealand context.

This chapter will, first discuss the findings relating to depression prevalence and findings regarding physical health and physical activity of older adults in the sample. This chapter will also discuss the findings relating to the relationship between depressive symptoms, physical health and physical activity which are discussed in the context of the current research and related theory which was reviewed in prior chapters. The studies strengths and limitations are then discussed, and implications of future research outlined. The concluding comments will include recommendations for future research.

5.1 Depression prevalence

The findings from the current study suggest that depression prevalence rates are greater among New Zealand community dwelling older adults relative to the general

population. The current study used a non-clinical sample of relatively healthy older adults. Results showed that around 23% of participants met or exceeded the cut off for clinical depression symptomology. Other research has found that 1-5% of the general population typically have depression (Blazer, 2002; Djernes, 2006), suggesting that the current study has a higher prevalence of older adults that meet the criteria for clinical depression. Other New Zealand studies such as the Te Rau Hinengaro estimated 5.7% of the general population suffered from depression (Wells, et al., 2006). As mentioned earlier, The New Zealand Health Survey found that 16.6% of adults were diagnosed with depression at some stage within their life time (Ministry of Health , 2018), The Health Promotion Agency also found similar findings for New Zealand depression rates (Kvalsvig, 2018). Begg, Richardson, & Wells, (2006) looked at New Zealand primary care, using the GDS-15 scale, they found that 10% of middle-old adults reported having experienced clinically significant depressive symptoms according to the cut-off score of 5.

Although these findings are considered high for community-dwelling adults, they are comparable to some overseas research using clinical samples which typically report rates between 10-25% (Blazer, 2002; Weyerer et al., 2008). The current study used the CES-D scale, which is a self-report screening tool that is now increasingly used by clinicians for screening patients for depressive disorders (Henry, Grant, & Cropsey, 2018). The scores range from 0-30 with scores equal to or above 10 indicative of depression (Tomitaka, et al., 2018). Other studies that have used the CES-D within an older adult population have shown rates of between 7% and 16%, (Andresen, Malmgren, Carter, & Patrick, 1994). The current study does provide supportive evidence of an increase in depressive prevalence rates among older adults. As noted earlier, depression among older adults is a relatively neglected topic but it can have serious consequences such as increased health issues, loss of interpersonal relationships, loneliness and even suicide (Fiske, Wetherell, & Gatz, 2009).

These findings support the need for more research on depression in later life, as ageing populations are a worldwide occurrence, with the number of people over 60 increasing (Statistics New Zealand, 1998). The higher rates of depression among older adults, could be due to age related stressors as mentioned in the biopsychosocial model, such as bereavement, declining physical health and biological vulnerability (Blazer & Hybels, 2009).

Although the current study showed that majority of the older adults sampled are not depressed, it is still important to acknowledge that, recent reports suggest that these prevalence rates for depressive disorders are increasing (Joyce, Oakley-Browne, Wells, Bushnell, & Hornblow, 1990). With up to a quarter of the current of older reporting depressive symptom, it is clearly an important area which, requires more research and attention. Depression among older adults has been shown to be associated with substantial costs and suffering to both the individual and society (Begg, Richardson, & Wells, 2006), and with an ageing population means these costs will increase. It is evident that more understanding of the various protective and risk factors is required for potential targets for treatment and prevention.

5.2 Depression and other health and demographic factors

When investigating further into the current sample of older adults, age showed a negative significant relationship with depression, physical activity and physical health. These relationships suggest that as people age, they will report poorer physical health, lower levels of physical activity and less depressive symptomology. Although the finding between age, physical activity and physical health is consistent with previous research, the negative relationship between age and depression is something that would need further exploration. Previous studies have shown that the average evaluation of one's psychological wellbeing increases with age (Steptoe, Deaton, & Stone, 2015), however research has also shown that depression is one of the most significant affective disorders among older adults (Heo, Ryu,

Yang, & Kim, 2018). Although the current study found a negative relationship between age and depression, it also found that around 23% of the participants met the symptom cut off point for depression. This suggests that older adults overall present with high depression rates, however this does decrease with age. Other studies have suggested that lower rates of depression can be associated with the difficulty in identifying depression among older adults, where their lowering physical health can overshadow their depressive symptoms (Fiske, Wetherell, & Gatz, 2009). The finding showing that older adults report poorer health as they get older could have this over shadowing effect on their reports of depression.

The current study also found that gender did not show a significant relationship with depression in bivariate analyses. This finding is inconsistent with previous literature that typically shows a gender difference with depression. Previous research has shown that women are almost twice as likely to develop depression (Nolen-Hoeksema, 2001). Research has also suggested that gender is a biological risk factor for depression, although the current study did not investigate it as main factor the analysis revealing a null finding is worth noting. Researchers have reliably found that when compared to men, older women are more likely to be experience economic and social risk factors associated with the development of depression, such as lower income, lower education, less skilled occupations, social isolation and widowhood (Zunzunegui, et al., 2007). These other risk factors mean that women are at a higher risk of developing depression in late life compared to men, it also means that it can vary across cultures and societies depending on what the gender related norms are of that society (Zunzunegui, et al., 2007). One possible explanation for the null finding is that the gender differences typically found in other depressive risk factors is not as great within New Zealand culture, therefore we would not find a gender difference for depression. This would need further research to determine if there is a gender difference between other risk and protective factors.

Ethnicity, education, marital status, occupation and employment were found to be significantly related to depressive symptoms in the bivariate analyses however, only marital status and socioeconomic status remained significant when controlling for all variables in multivariate analyses. Previous studies have found that among the adult Māori population there is a significant difference in depression prevalence rates, where they report higher symptomology compared to non-Māori individuals (Baxter, Kingi, Tapsell, Durie, & McGee, 2006). The Te Rau Hinengaro study mentioned earlier estimated that depression prevalence among Māori was 6.9% compared to 5.7% for non-Māori (Baxter, Kingi, Tapsell, Durie, & McGee, 2006). It could be argued that the difference found in the bivariate analysis is due to socioeconomic differences, therefore when controlling for socioeconomic status and other associated variables such as: occupation, employment and education the difference is no longer significant. Socioeconomic status as a risk factor for depression is a common and persistent finding across cultures, and is associated with reduced access to health care, higher incidences of smoking, obesity, diabetes and other health issues (Ellison-Loschmann & Pearce, 2006). Within New Zealand Māori have been shown to have a socioeconomic disadvantage compared to non-Māori which could explain the differences in depression changing once controlling for other variables.

Education, occupation and employment are all common confounding variables that were controlled for in the current study. The initial analysis showed that those with lower education level (No qualification / secondary school) showed higher depression rates, along with those who are unemployed/ retired or in a non-professional occupation all showed higher rates of depression. However, these variables were no longer significant in the multivariate analysis when controlling for other variables (for example, socioeconomic status). These variables are closely linked to socioeconomic status, which has been shown to have an impact on health care, and health related outcomes (Ellison-Loschmann & Pearce,

20006). Socioeconomic status can be shown to influence multiple risk factors within the biopsychosocial model, (such as age, gender, education, occupation) arguably making it an important factor when looking at depression and health outcomes. Further research could look to investigate the extent to which socioeconomic status impacts depression prevalence among older adults.

Marital status remained a significant contributor to depression in multivariate analyses. Participants who were in a relationship showed lower depression scores compared to those who were not in a relationship. This, this finding supports the biopsychosocial model where social networks, social ties and social support have been identified as key risk and protective factors. While social engagement was not a key variable in the current study further in-depth examination of older adults' social environments and the impact, they have on depression is an important focus for ongoing research.

5.3 Physical health among older adults

The present study's findings are consistent with previous research which has found a negative relationship between depression and physical health among older adults (Beekman, et al., 1997; Elliot, Renier, & Palcher, 2003; Wrosch, Schulz, Miller, Lupien, & Dunne, 2007). These findings in the current study remained significant even when controlling for potential confounding factors (see table 5).

As mentioned in Chapter 2 individuals with depressive symptoms and poor physical health are associated with poorer health outcomes, lower quality of life and higher likelihood of suicide (Domenech-Abella, 2018). It has been shown that those who have a chronic illness will likely show a poorer prognosis due to the relationship with depression (Benedetto, et al., 2014). Physical health problems and disabilities which are commonly associated with age, found to be closely related with depression and cognitive impairment among older adults (Geerlings, Beekman, Deeg, & Van Tilburg, 2000; Kim, et al., 2005).

Physical health has a bidirectional relationship with depression, where depression can contribute to common physical health issues, for example depression can lead to weight loss, and a change to a more sedentary lifestyle, and in turn profound weight loss and inactivity can contribute to depressive symptoms (Benedetto, et al., 2014; Blazer & Hybels, 2009). Due to the cross-sectional nature of the study it makes it difficult to infer causality and it is suggested that longitudinal data would be needed.

It is important to acknowledge that there is the potential for overlap in the scales used to measure physical health and depression which could inflate the correlation between the two variables. The items which may measure similar constructs as the depression scale includes somatic complaints, for example; 'My sleep was restless', while the SF -12 PCS asked respondents whether emotional problems have interfered with daily activities.

Although this is unlikely to have a major impact on the findings between physical health and depression, it is worth noting especially when considering previous research that suggests older adults are less likely to show typical affective symptoms compared to younger adults and are more likely to see their symptoms as common features of ageing (Fiske, Wetherell, & Gatz, 2009).

The current findings add support to the Biopsychosocial model of depression, where physical health is seen as a biological risk factor (see figure 2) (Beck, 2008). Physical health can also have an impact on the social and psychological aspects of one's life (Blazer & Hybels, 2009). For instance, physical disability can lead to a higher frequency of negative life events and a stronger negative bias towards certain events (psychological risk factor). Poor physical health and also lead to restricted social and leisure activities and subsequent isolation and reduced quality of social support that is often associated with chronic illnesses (social risk factor). The current study adds to previous research showing the relationship between physical health and depression, which supports the biopsychosocial model that

highlights the connections between multiple risk factors for depression.

5.4 Physical activity among older adults

The biopsychosocial approach recognises that depression within the older population occurs in the context of both protective and risk factors related to the ageing process (Fiske, Wetherell, & Gatz, 2009). It also recognises that there are various forms of protective factors (i.e. factors with biological, psychological and social origins), that can act as a buffer for individuals against depressive symptoms. The present study focused on physical activity as a biological factor. Like physical health, physical activity does have an impact on social and psychological aspect of the biopsychosocial model, where physical activity is linked to greater social networks and support as well as improving cognitive functioning. Consistent with existing research, most older adults in the current sample reported being physically active (Dinas, Koutedakis, & Flouris, 2011; Teixeira, Vasconcelos-Raposo, Fernandes, & Brustad, 2013).

The current study found around sixty-one percent of participants reported engaging in moderate physical activity more than once a week. This is relatively high compared to other New Zealand based studies which found thirty-one percent of adult New Zealanders engaged in some physical activity (Sport and Recreation New Zealand: Active New Zealand survey, 2008). The current study also found that only 12.5% reported engaging in exercise “hardly ever” or “never”, which is in line with previous research that estimated around thirteen percent of New Zealand adults were found to be inactive (Sport and Recreation New Zealand: Active New Zealand survey, 2008). Previous research has also found that regular moderate intensity physical activity (for example, brisk walks, gardening and cycling) plays an important role in overall good health and wellbeing, as well as disease prevention (Booth, Owen, Bauman, Clavisi, & Leslie, 2000; Chodzko-Zajko, et al., 2009; Gregg, Pereira, & Caspersen, 2000).

The current study also found a significant negative relationship between depression and physical activity, which is consistent with previous literature demonstrating that individuals that are more active have lower incidences of depression (Drewnowski & Evans, 2001; Teixeira, Vasconcelos-Raposo, Fernandes, & Brustad, 2013). Research has shown that physical activity has a have range of health benefits including mental health benefits (Strohle, 2009; Laurin, Verreault, & Lindsay, 2001), and the absence of physical activity has been linked to the development of mental disorders (Camacho, Roberts, Lazarus, Kaplan, & Cohen, 1991Strohle, 2009).

The current study also investigated the potential moderating effect of physical activity on the relationship between physical health and depression. It was expected that the relationship between poorer physical health and depression would be weaker for those who engaged in more physical activity. The current study found that, although there were significant main effects for physical health and physical activity on depression, the interaction term was not significant. A possible explanation for this finding is that older adults with poorer physical health may not be able to participate in the level of physical activity required to reduce depression. Our measure of physical activity was relatively broad (“moderately energetic”) and relied on self-report of frequency. In future research it may be more valuable to measure the specific types of moderate activities older adults undertake and the time (minutes/hours) spent undertaking them. This type of measurement may offer more nuanced information about the role of physical activity in the development of depression for older adults with poorer health and may provide targeted focus for interventions.

Although the current study did not find a significant moderating effect for physical activity on the relationship between physical health and depression, there may be other protective factors that could moderate this relationship. Further research should explore which other factors within the biopsychosocial model may interact with physical health to act

as protective factors for depression.

5.6 Strengths and limitations

The current study investigated the relationship between depressive symptoms, physical health and physical activity among community-dwelling older adults. The current study's findings highlight the importance of the relationship between depression and physical health to potentially inform the focus of physical activity interventions for depression in that population. Although majority of the sampled population are not considered depressed, the portion that did experience clinically significant levels of depressive symptoms is still significant. With up to a quarter of older adults experiencing depression, there is still a significant amount of suffering associated to the individual and community (Hyman, 2013).

Major strengths of this study are that the HWR study has a large sample size and aims to maintain a nationally representative sample, which allows for more certainty in the reported relationships between depression, physical health and physical activity in this age group in New Zealand.

The current study did have some limitations that should be acknowledged, and which would ideally be addressed in future research. Firstly, the current study utilised the HWR survey, which is a pre-existing dataset, where the current study's hypotheses were not the intended focus. Additionally, this meant that the measures used for the current study were restricted to what was available in the dataset. For instance, physical health was measured using the SF-12 scale PCS. This is a self-report scale, which means subjective reporting. Future research could use more objective measures of physical health (such as physical health records or diagnoses by a health professional). In addition, there is the potential for some overlap between depression and physical health scales as mentioned earlier. The use of self-report measures tends to lend itself to the influence of the social desirability effect where participants may respond according to what they feel will be viewed more favourably by

others, for example by reporting more positive physical activity behaviours and fewer negative health behaviours (Coolican, 2004).

Data used in the current study was cross-sectional which limits the ability to determine causality. This also means that the data was collected at one particular point in time, where change with age cannot be accounted for. It can be difficult to untangle age cohort effect, when comparing cross-sectionally across different age groups. In order to determine particular cohort or significant life event effect, they study would need to take a longitudinal approach.

The present study's sample consisted of older adults who were 55 or older, and who were generally healthy community dwellers as part of a longitudinal study. Using community dwellers does make the sample more representative of older adults however, with the participants being part of a longitudinal study it does also mean the sample is likely to consist of wealthier, and healthier individuals compared to the general population. It is common with longitudinal research the poorer and sicker drop out therefore the current study could be underestimating relationships in the general population of this age group. By not using a clinical sample it also means the participants are likely to be healthier and show lower prevalence rates for depression. Future research could look at clinical sample to determine if there is a particular threshold in which physical activity does effect depression.

There were other important protective and risk factors that the current study was unable to control for, for example depressive history is a key psychological risk factor that the current study was not able to measure (Gilbert, 2004). Previous research shows that even when controlling for related risk factors such as functional ability, age still remains a risk factor for depression. This indicates that there is increasing biological risk for depression linked to the ageing process (Blazer & Hybels, 2009). Future research would benefit from including other potential biological risk factors, such as disease related pathology (shown in

figure 2), as well as examining the what kind of protective power psychological (i.e., emotional regulation), social (i.e., close social ties and social activity) and biological strengths (healthy diet and exercise) can have, which may be important when understanding depression among older people.

The biopsychosocial model consists of both risk and protective factors that are broadly considered to be under three main categories (social, psychological and biological). The current study focused on physical health and physical activity as the main protective and risk factors. Future studies could look to add additional risk or protective factors, for example, loneliness or social connections.

A final limitation of the current study that is worth noting is that the bidirectional relationship between physical health and depression was not tested. Previous research has acknowledged a possible bidirectional relationship between physical health and depression and future longitudinal research could explore this relationship more fully.

5.6 Implications of research findings

The present study showed three main findings which have implications for informing intervention efforts and research of depression among older adults. First, individuals with physical health issues are more likely to also suffer from depression. Second, those who engage in more physical activity are less likely to show depressive symptoms. Lastly, physical activity does not appear to moderate the relationship between poor physical health and depressive symptomology. This suggests that physical activity is likely to be beneficial for older adults in reducing the probability of developing depressive symptoms but is unlikely to contribute added benefit for those in poorer health.

These findings are consistent with previous research and add support to the current theoretical understandings of depression. Both physical health and physical activity, as biological factors within the biopsychosocial model, do individually have an impact on

depression and these findings emphasize the role of both risk and protective factors in the etiology of depression.

However, the present study suggests that more research is required to understand how these protective and risk factors interact, in order to better inform public policy and interventions.

5.7 Concluding comments and future research

The aim of this study was to investigate physical health and physical activity in relation to depression among older adults. By examining these two protective and risk factors for depression, it is hoped that this research will add support to the biopsychosocial model of depression as well as highlight a need to further research into depression among older adults.

The current study found significant relationships between physical health and depression, as well as physical activity and depression. Along with this the current sample showed a relatively high prevalence of depression.

The biopsychosocial theory suggests that there are both protective and risk factors that contribute to either increased depressive symptomology or protect against depression. The non-significant finding from the current study regarding the moderating effect of physical activity suggests that future research should also investigate other potential protective factors and moderating factors against depression when chronic illness is a risk factor.

The present study investigated the effects of moderate physical activity. This was based on previous research that suggests regular moderate physical activity is seen to have a crucial role in one's overall wellbeing and disease prevention (Booth, Owen, Bauman, Clavisi, & Leslie, 2000; Chodzko-Zajko, et al., 2009; Gregg, Pereira, & Caspersen, 2000). The findings that moderate physical activity was linked to lower levels of depressive symptomatology suggests that the use of moderate physical activities may still act as a protective factor for depression among older adults (Rejeski & Mihailko, 2001). In light of

increased longevity and improved health in the older population, future research could investigate different levels of physical activity to determine if other levels of physical activity are more beneficial in this age group.

Future research could investigate other protective factors that may moderate the relationship between physical health and depression. The biopsychosocial model indicates that a number of biological, psychological and social factors, may act as a buffer against depression. There is the potential to look at social ties and social activity in conjunction with physical activity. Research has noted the importance of social connections for promoting health and wellbeing, especially in relation to older adults with depression (Berkman et al., 2000; Blazer, 2002; Cohen & Wills, 1985).

In conclusion, the findings of this study extend our current knowledge with respects to understanding depression in late life. It appears there is a need to continue researching depression and possible risk and protective factors.

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Appendix A

Health, Work and Retirement Survey: March 2018

Please read the following carefully

You can decline to answer any particular question.

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 answer that is most appropriate. These are the most common question types - for these items,

please mark (e.g. ✓ or ✗) one box on each line in pen or pencil. 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 tick all that apply'.

a free text response. To provide free text, please print your response as clearly as possible on the line provided.

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

(Please tick 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"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ |
| Stroke | <input checked="" type="checkbox"/> ₁ | <input type="checkbox"/> ₂ | <input type="checkbox"/> ₃ |
| Cancer | <input type="checkbox"/> ₁ | <input checked="" type="checkbox"/> ₂ | <input type="checkbox"/> ₃ |
| 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 squares as appropriate:

| | | | |
|--|----------------------|----------------------|--------------------------------|
| Adult child(ren) and/or grandchild(ren)/mokopuna | <input type="text"/> | <input type="text"/> | <input type="text" value="5"/> |
|--|----------------------|----------------------|--------------------------------|

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

YOUR HEALTH, WELLBEING AND QUALITY OF LIFE

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

| Excellent | Very good | Good | Fair | Poor |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

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

| Very dissatisfied | Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied |
|----------------------------|----------------------------|------------------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

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

| Very poor | Poor | Neither good nor poor | Good | Very good |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

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 tick one box on each line)

| | Yes, limited a lot | Yes, limited a little | No, not limited at all |
|---|----------------------------|----------------------------|----------------------------|
| <u>Moderate activities</u> , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Climbing <u>several</u> flights of stairs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |

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 tick 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Were limited in the <u>kind</u> of work or other activities | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

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 tick 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Did work or other activities <u>less carefully than usual</u> | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

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

| Not at all | A little bit | Moderately | Quite a bit | Extremely |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

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 tick 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 |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Have you felt calm and peaceful? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Have you felt downhearted and depressed? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Did you have a lot of energy? | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

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 tick one box)

| All of the time | Most of the time | Some of the time | A little of the time | None of the time |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q10 Please answer the following questions about yourself by indicating the extent of your agreement.

(Please tick one box on each line)

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| There is not enough purpose in my life. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| To me, the things I do are all worthwhile. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Most of what I do seems trivial and unimportant to me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I value my activities a lot. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I don't care very much about the things I do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I have lots of reasons for living. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q11 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).

(Please tick one box on each line)

| | Rarely or none of the time | Some or a little of the time | Occasionally or a moderate amount of the time | All of the time |
|--|----------------------------|------------------------------|---|----------------------------|
| I was bothered by things that usually don't bother me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I had trouble keeping my mind on what I was doing. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I felt depressed. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I felt that everything I did was an effort. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I felt hopeful about the future. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I felt fearful. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| My sleep was restless. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I was happy. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I felt lonely. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I could not "get going." | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q12 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.

(Please tick one box on each line)

| | Agree | Disagree |
|--|----------------------------|----------------------------|
| I worry a lot of the time. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Little things bother me a lot. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| I think of myself as a worrier. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| I often feel nervous. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| My own thoughts often make me nervous. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

Q13 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 tick 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel that what happens to me is out of my control. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel left out of things. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I can do the things that I want to do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel that I can please myself what I do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Shortage of money stops me from doing things I want to do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I look forward to each day. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel that my life has meaning. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I enjoy the things that I do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel full of energy these days. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel that life is full of opportunities. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel that the future looks good for me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q14 How often do you take part in sports or activities that are:

(Please tick one box on each line)

| | More than once a week | Once a week | One to three times a month | Hardly ever or never |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| ...vigorous (e.g., running or jogging, swimming, aerobics) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| ...moderately energetic (e.g., gardening, brisk walking) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| ...mildly energetic (e.g., vacuuming, laundry/washing) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q15 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 tick one box)

| Never | 1 time | 2 times | 3-5 times | 6-11 times | 12 times or more |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q16 In the last 12 months, how many times have you yourself:

(Please tick 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Used a service at, or been admitted to, a hospital | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Gone to a hospital emergency department as a patient | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Consulted another health professional other than the above | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Sought medical treatment for an accident or injury (including any of the above contacts) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q17 Please tick 'Yes' to indicate if a health professional has told you that you have any of the following conditions.

(Please tick 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Disorder of the neck or back. (e.g. lumbago, sciatica, chronic back or neck pain, vertebrae or disc problems) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Diabetes | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Disability | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Please specify disability: | | | |
| Heart trouble (e.g., angina or heart attack) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| High blood pressure or hypertension | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Depression | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Other mental illness | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Please specify other mental illness: | | | |
| Respiratory condition (e.g., bronchitis, asthma) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Sleep disorder | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Stroke | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Active or chronic gout | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Active/chronic hepatitis, cirrhosis or other liver condition | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Cancer | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Please specify cancer (e.g. lung, leukaemia, melanoma): | | | |
| Other illness | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Please specify other illness: | | | |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q18 Can you see ordinary newsprint? (with glasses or contact lenses if you usually wear them)
(Please tick one box)

| | | |
|----------------------------|----------------------------|----------------------------|
| Easily | With difficulty | Not at all |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |

Q19 Can you hear a conversation with one other person? (even when wearing hearing aids)
(Please tick one box)

| | | |
|----------------------------|----------------------------|----------------------------|
| Easily | With difficulty | Not at all |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |

Q20 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 tick one box)

| | | | |
|----------------------------|----------------------------|----------------------------|-----------------------------|
| No, not at all | Yes, once | Yes, twice | Yes, 3 or more times |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q21 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 tick one box)

| | | | |
|----------------------------|----------------------------|----------------------------|-----------------------------|
| No, not at all | Yes, once | Yes, twice | Yes, 3 or more times |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q22 How many hours of sleep do you usually get in a 24 hour period, including all naps and sleeps?

| | | |
|----------------------|----------------------|-----------------------------|
| <input type="text"/> | <input type="text"/> | Hours (range 1 – 24) |
|----------------------|----------------------|-----------------------------|

Q23 What is your current driving status? (Please tick one box)

| | | |
|--|---|---|
| <input type="checkbox"/> Current driver | <input type="checkbox"/> Past driver | <input type="checkbox"/> Never been a driver |
|--|---|---|

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

Q24a Have you, at any stage of your life, ever been a regular smoker? (Please tick one box)

| | |
|---------------------------------------|--------------------------------------|
| <input type="checkbox"/> 1 Yes | <input type="checkbox"/> 2 No |
|---------------------------------------|--------------------------------------|

Q24b If you currently consider yourself a regular smoker, how many do you think you would smoke on an average day? (Please tick one box)

| | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| 1 to 10 | 11 to 20 | 21 to 30 | 31 or more | Not a regular smoker |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q25a How often do you have a drink containing alcohol? (Please tick 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"/> |

Q25b If you answered 'Never' at Q25a, have you ever drunk alcohol in the past? (Please tick one box)

| | | |
|----------------------------|----------------------------|---------------------------|
| Yes | No | If 'No', go to Q26 |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q25c How many drinks containing alcohol do you have on a typical day when drinking? (*Please tick one box*)

| 1 or 2 more | 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"/> |

Q25d How often do you have six or more drinks on one occasion? (*Please tick one box*)

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

WHĀNAU, FAMILY AND FRIENDS

Q26 Do you provide unpaid care for:

(*Please tick one box on each line*)

| | Yes, daily | Yes, weekly | Yes, occasionally | No, never | Not applicable (I have none) |
|----------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------------|
| Your grandchildren/mokopuna? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other people's children/whāngai? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q27 I contribute my time and/or labour to volunteer activities: (*Please tick one box*)

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

Q28 How many hours do you contribute to volunteer activities per week?

| | | |
|----------------------|----------------------|-----------------------|
| <input type="text"/> | <input type="text"/> | Hours per week |
|----------------------|----------------------|-----------------------|

Q29 Please indicate whether or not you give your time in any of the ways listed below. If 'yes', please indicate how many hours per week you give on average:

(*Please tick one box on each line*)

| | No | Yes | Hours per week | |
|--|--------------------------|--------------------------|----------------------|----------------------|
| Providing a good (e.g., serving food at a homeless shelter, providing books to schools) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> |
| Activism, campaigning or advocacy (e.g., raising funds for campaigns, writing letters) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> |
| Providing a community service (e.g., coaching a sports team, working in an opportunity shop) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> |
| Environmental stewardship (e.g., cleaning up park lands) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> |
| Mahi a whānau/Kapa haka, marae or hui | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> |
| Any other way of giving your time to the community | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> | <input type="text"/> |

Q30 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

(Please tick one box on each line)

| | No | Yes |
|--|----------------------------|----------------------------|
| Sports clubs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Community or service organisations that help people | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Political party, or professional association, or business organisation | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| A trade union | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Religious, church, or other spiritual organisation | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Hobby, leisure time, or arts association/group | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Group that support cultural traditions, knowledge or arts | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |
| Any other, club, lodge or similar organisation | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 |

Q31 Please indicate for each of the statements below, the extent to which they apply to the way you feel now.

(Please tick one box on each line)

| | Yes | More or less | No |
|--|----------------------------|----------------------------|----------------------------|
| I experience a general sense of emptiness. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| There are plenty of people I can rely on when I have problems. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| There are many people I can trust completely. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| There are enough people I feel close to. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| I miss having people around. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| I often feel rejected. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |

Q32 Think about your current relationships with friends, family/whānau 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 tick one box on each line)

| | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| There are people I can depend on to help me if I really need it. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel that I do not have close personal relationships with other people. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There is no one I can turn to for guidance in times of stress. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There are people who depend on me for help. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There are people who enjoy the same social activities I do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Other people do not view me as competent. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel personally responsible for the well-being of another person. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel part of a group of people who share my attitudes and beliefs. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

(Q32 continued)

| | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| I do not think other people respect my skills and abilities. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| If something went wrong, no one would come to my assistance. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I have close relationships that provide me with a sense of emotional security and well-being. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There is someone I could talk to about important decisions in my life. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I have relationships where my competence and skills are recognised. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There is no one who shares my interests and concerns. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There is no one who really relies on me for their wellbeing. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

| | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| There is a trustworthy person I could turn to for advice if I were having problems. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I feel a strong emotional bond with at least one other person. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There is no one I can depend on for aid if I really need it. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There is no one I feel comfortable talking about problems with. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There are people who admire my talents and abilities. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| I lack a feeling of intimacy with another person. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There is no one who likes to do the things I do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| There are people I can count on in an emergency. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| No one needs me to care for them. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

CAREGIVING

Q33 Do you receive a *Supported Living Allowance* payment for providing care for another person?

1 **Yes** 2 **No**

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.

Q34 Have you provided care for someone with a long-term illness, disability or frailty within the last 12 months? (*Please tick one box*)

1 **Yes** 2 **No** **If you ticked 'No' please go to Q53**

Q35 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 tick one box*)

One person **Two people** **More than two people**

1 2 3

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

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.

Q36 Approximately how old is/was the person you care(d) for?

| | | |
|----------------------|----------------------|-------|
| <input type="text"/> | <input type="text"/> | Years |
|----------------------|----------------------|-------|

Q37 How long have/had you been caring for this person?

| | | | | | |
|----------------------|----------------------|-------|----------------------|----------------------|--------|
| <input type="text"/> | <input type="text"/> | Years | <input type="text"/> | <input type="text"/> | Months |
|----------------------|----------------------|-------|----------------------|----------------------|--------|

Q38 How often on average do (did) you provide this care or assistance? (*Please tick one box*)

| Every day | Several times per week | Once a week | Once every few weeks | Less often |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q39 On average, how many hours per week did/do you care for this person?

| | | | |
|----------------------|----------------------|----------------------|----------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | Hours per week |
|----------------------|----------------------|----------------------|----------------|

Q40 Is the person you care(d) for your: (*Please tick one box*)

| | | | |
|--------------------------|------------------------------|--------------------------|--------------------------------|
| <input type="checkbox"/> | Spouse or partner | <input type="checkbox"/> | Mother-in-law or father-in-law |
| <input type="checkbox"/> | Mother or father | <input type="checkbox"/> | Brother or sister |
| <input type="checkbox"/> | Son or daughter | <input type="checkbox"/> | Friend |
| <input type="checkbox"/> | Other relative/whānau member | <input type="checkbox"/> | Other |

Q41 Does/did the person you care(d) for: (*Please tick one box*)

| | | | |
|--------------------------|-------------------------------|--------------------------|---|
| <input type="checkbox"/> | Live with you | <input type="checkbox"/> | Live alone |
| <input type="checkbox"/> | Live with their family/whānau | <input type="checkbox"/> | Live in a nursing home or care facility |
| <input type="checkbox"/> | Live with their friends | <input type="checkbox"/> | Other |

Q42a Does/did the person you care(d) for have any of the following major medical conditions or disabilities? (*Please tick 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): |

Q42b In your opinion, how severe are the symptoms of these major medical conditions or disabilities experienced by the person you care(d) for? (*Please tick one box*)

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

Q43a **PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS** you cared for in a crisis (e.g. an illness, accident, or family crisis) that has interfered with your other commitments?

| | | | |
|--------------------------|------------|--------------------------|-----------|
| <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
|--------------------------|------------|--------------------------|-----------|

Q43b How many separate crises did you help with in the past 12 months?

| | | | |
|----------------------|----------------------|----------------------|---|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | Number of crises in the past 12 months |
|----------------------|----------------------|----------------------|---|

Q43c In all, how many days in the past 12 months were you away from work because of these crises?

| | | | |
|----------------------|----------------------|----------------------|-----------------------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | Days in the past 12 months |
|----------------------|----------------------|----------------------|-----------------------------------|

Q44 Has the person you cared for been admitted to hospital in the past 12 months? (*Please tick one box*)

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

Q45 Do you provide help to the person you care(d) for with any of the following activities?

(*Please tick 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"/> |

Q46 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

(Please tick one box on each line)

| | Yes | Help is needed but not provided | Help is not needed | N/A |
|---|----------------------------|---------------------------------|----------------------------|----------------------------|
| Your children | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Your siblings | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Your spouse/partner | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Other family/whānau | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Friends | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Neighbours | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Publicly funded services | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Support agencies you or your family pay for | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Voluntary support agencies | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Other | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q47 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"/> | Hours | <input type="text"/> | <input type="text"/> | Minutes |
|----------------------|--------------|----------------------|----------------------|----------------|

(b) Time from your workplace to the person's residence.

| | | | | | | | |
|----------------------|--------------|----------------------|----------------------|----------------|----|----------------------------|---|
| <input type="text"/> | Hours | <input type="text"/> | <input type="text"/> | Minutes | OR | <input type="checkbox"/> 1 | I am not in the work force (go to Q51) |
|----------------------|--------------|----------------------|----------------------|----------------|----|----------------------------|---|

The government introduced the right for anybody who has worked for the same employer for at least six months to request flexible work arrangements (e.g., leave without pay, reduced hours).

Q48 Were you aware of this right to request flexible working arrangements?

| | | | |
|----------------------------|------------|----------------------------|-----------|
| <input type="checkbox"/> 1 | Yes | <input type="checkbox"/> 2 | No |
|----------------------------|------------|----------------------------|-----------|

Q49 Have you requested flexible working arrangements from your employer due to your care giving responsibilities?

| | | | |
|----------------------------|------------|----------------------------|-----------|
| <input type="checkbox"/> 1 | Yes | <input type="checkbox"/> 2 | No |
|----------------------------|------------|----------------------------|-----------|

Q50 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS help and support to the person you care for:

(Please tick 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Taken annual leave | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Used your own sick leave | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Taken "domestic" leave | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Taken time in lieu, or worked flexitime in consultation with supervisor/colleagues | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Paid someone else to provide care which you would have preferred to provide yourself | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Arranged with another family/whānau member to provide the care you normally provide | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Made phone calls or provided care yourself in work time | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Reduced hours of work | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Formalised care leave arrangement with employer | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Working more from home | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Flexible work hours | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Changed work role or tasks to be less demanding (temporarily) | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Postponement of certain tasks/activities | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q51 Do you have a good relationship with the person you care for? (Please tick one box)

| Never | Sometimes | Often | Always |
|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q52 Overall, what is the effect on your life of providing care? My life is: (Please tick one box)

| A lot better for it | A little better for it | Neither better nor worse for it | A little worse for it | A lot worse for it |
|----------------------------|----------------------------|---------------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

WHERE YOU LIVE

Q53 Which one of the following options best describes the type of residence that you currently live in (your primary residence)? (Please tick one box)

| | |
|----------------------------|---|
| <input type="checkbox"/> 1 | House or townhouse (detached or 'stand alone') |
| <input type="checkbox"/> 2 | House, townhouse, unit or apartment (joined to one or more other houses, townhouses, units or apartments) |
| <input type="checkbox"/> 3 | Unit, villa or apartment in Retirement Village |
| <input type="checkbox"/> 4 | Moveable dwelling (e.g., caravan, motor home, boat, tent) |
| <input type="checkbox"/> 5 | Rest home or continuing care hospital |
| <input type="checkbox"/> 6 | Other (Please specify): |

Q54 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

| | |
|--------------------------|---|
| <input type="checkbox"/> | Owned by yourself and/or spouse/partner with a mortgage |
| <input type="checkbox"/> | Owned by yourself and/or spouse/partner without a mortgage |
| <input type="checkbox"/> | Owned by family/whānau |
| <input type="checkbox"/> | Owned by a family/whānau trust |
| <input type="checkbox"/> | Private rental |
| <input type="checkbox"/> | State, Council or Kaumātua housing |
| <input type="checkbox"/> | Licence to occupy |
| <input type="checkbox"/> | Other (Please specify): _____ |

Q55

How long have you lived in your present home?

| | | | |
|--|--------------|--|---------------|
| | Years | | Months |
|--|--------------|--|---------------|

Q56 Do you plan to move to a new place of residence in the future? (*Please tick one box*)

| No | Yes, within 12 months | Yes, within 5 years | Yes, within 10 Years | Yes, later than 10 years |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q57 Please rate your level of agreement to each of these statements in relation to your present home.

(*Please tick one box on each line*)

Neutral

| | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| I am satisfied with my house. | <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"/> |
| 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"/> |
| My house enables me to see friends and family/whānau as often as I like. | <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"/> |
| My house supports all my daily activities. | <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"/> |
| I am able to keep my house warm. | <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"/> |
| I can get to the shops easily. | <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"/> |
| I am close enough to important facilities. | <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"/> |
| I feel safe in my neighbourhood. | <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"/> |
| I have peace of mind at home. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q58 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

| 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q59 Does your residence have a problem with dampness or mould? (*Please tick one box*)

| No | Minor problem | Moderate problem | Major problem |
|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q60 In winter, is your current residence colder than you would like? (*Please tick one box*)

| Yes - always | Yes - often | Yes - sometimes | No |
|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q61 Please rate your level of agreement to each of these statements in relation to your present neighbourhood:

(*Please tick one box on each line*)

| | Strongly disagree | | Neutral | | Strongly Agree |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| People in this area would do something if a house was being broken into. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| In this area people would stop children if they saw them vandalising things. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| People would be afraid to walk alone after dark. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| People in this area will take advantage of you. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| If you were in trouble, there are lots of people in this area who would help you. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Most people in this area can be trusted. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

WORK AND RETIREMENT

Q62 If you are retired, at what age did you retire?

| | | | | |
|----------------------|----------------------|--------------------------|----------------------------|-------------------------|
| <input type="text"/> | <input type="text"/> | Age at retirement | <input type="checkbox"/> 1 | I am not retired |
|----------------------|----------------------|--------------------------|----------------------------|-------------------------|

Q63 How many hours do you currently work in paid employment per week?

| | | |
|----------------------|----------------------|--------------|
| <input type="text"/> | <input type="text"/> | Hours |
|----------------------|----------------------|--------------|

Q64a Since the age of 50, have you personally started a business?

| | | | |
|----------------------------|------------|----------------------------|-----------|
| <input type="checkbox"/> 1 | Yes | <input type="checkbox"/> 2 | No |
|----------------------------|------------|----------------------------|-----------|

Q64b If 'Yes', what industry or service sector was this in?

Q64c Since the age of 50, have you *considered* starting a business?

| | | | |
|----------------------------|------------|----------------------------|-----------|
| <input type="checkbox"/> 1 | Yes | <input type="checkbox"/> 2 | No |
|----------------------------|------------|----------------------------|-----------|

Q65 **PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS** be doing)
 (Please tick one box)

| | | |
|---|--------------------------|----|
| Full-time paid work, for an employer | <input type="checkbox"/> | 1 |
| Part-time paid work, for an employer | <input type="checkbox"/> | 2 |
| Full-time self-employed paid employment | <input type="checkbox"/> | 3 |
| Part-time self-employed paid employment | <input type="checkbox"/> | 4 |
| Flexible work schedule negotiated with employer | <input type="checkbox"/> | 5 |
| Project or contract work (short term and full-time) | <input type="checkbox"/> | 6 |
| Project or contract work (short term and part-time) | <input type="checkbox"/> | 7 |
| Fully retired, no paid work | <input type="checkbox"/> | 8 |
| Full-time homemaker | <input type="checkbox"/> | 9 |
| Full-time student | <input type="checkbox"/> | 10 |
| Other (Please specify): | <input type="checkbox"/> | 11 |

Q66 Which of the following best describes your **current** work status? (Please tick one box)

| | | | |
|---|--------------------------|----|-----------|
| Full-time paid work, for an employer | <input type="checkbox"/> | 1 | go to Q68 |
| Part-time paid work, for an employer | <input type="checkbox"/> | 2 | |
| Full-time self-employed paid employment | <input type="checkbox"/> | 3 | |
| Part-time self-employed paid employment | <input type="checkbox"/> | 4 | |
| Flexible work schedule negotiated with employer | <input type="checkbox"/> | 5 | |
| Project or contract work (short term and full time) | <input type="checkbox"/> | 6 | |
| Project or contract work (short term and part time) | <input type="checkbox"/> | 7 | |
| Fully retired, no paid work | <input type="checkbox"/> | 8 | go to Q95 |
| Full-time homemaker | <input type="checkbox"/> | 9 | |
| Full-time student | <input type="checkbox"/> | 10 | |
| Unable to work due to health or disability issue | <input type="checkbox"/> | 11 | go to Q67 |
| Unemployed and seeking work | <input type="checkbox"/> | 12 | |
| Other (Please specify): | <input type="checkbox"/> | 13 | |

(Please tick one box on each line)

| | Strongly disagree | | | | | Strongly agree | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| My job search was more or less haphazard. | <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"/> |
| My approach to gathering job-related information could be described as random. | <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 used a "hit or miss" approach when gathering information about my job. | <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 did not really have a plan when searching for my job. | <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 followed up on every lead to make sure I didn't miss any golden opportunities. | <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 tried to get my resume out to as many organisations as possible. | <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 followed up on most leads, even long shots. | <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 gathered as much information about all the companies that I could. | <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 examined all available sources of job information (e.g., employment centres, friends, internet sites, etc.). | <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"/> |
| | Strongly disagree | | | | | Strongly agree | | | | |
| I gathered information about all possible job opportunities, rather than setting out for something specific. | <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 gathered information only for job openings that looked like what I wanted. | <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 gathered information only for jobs that I was really interested in. | <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"/> |
| My information gathering efforts were focused on specific jobs. | <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 gathered information only for jobs that I knew I would qualify for. | <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 targeted my job search toward a small number of employers. | <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 had a clear idea of what qualities I wanted in a job. | <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 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"/> | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Thank you, if you were instructed to go to Q67 from Q66, please now go to Q95.

Q68 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

| | | |
|--------------------------|---|--|
| <input type="checkbox"/> | 1 | Labourer (e.g., cleaner, food packer, farm worker) |
| <input type="checkbox"/> | 2 | Machinery operator/driver (e.g., machine operator, store person) |
| <input type="checkbox"/> | 3 | Sales worker (e.g., insurance agent, sales assistant, cashier) |
| <input type="checkbox"/> | 4 | Clerical/administrative worker (e.g., administrator, personal assistant) |
| <input type="checkbox"/> | 5 | Community or personal service worker (e.g., teacher aide, armed forces, hospitality worker, carer) |
| <input type="checkbox"/> | 6 | Technician/trades worker (e.g., engineer, carpenter, hairdresser) |
| <input type="checkbox"/> | 7 | Professional (e.g., accountant, doctor, nurse, teacher) |
| <input type="checkbox"/> | 8 | Manager (e.g., general manager, farm manager) |
| <input type="checkbox"/> | 9 | Other (Please specify): |

Q69a How long have you worked for your current employer?

| | | | | | |
|----------------------|----------------------|--------------|----------------------|----------------------|---------------|
| <input type="text"/> | <input type="text"/> | Years | <input type="text"/> | <input type="text"/> | Months |
|----------------------|----------------------|--------------|----------------------|----------------------|---------------|

Q69b If you are self-employed, how long have you been self-employed?

| | | | | | |
|----------------------|----------------------|--------------|----------------------|----------------------|---------------|
| <input type="text"/> | <input type="text"/> | Years | <input type="text"/> | <input type="text"/> | Months |
|----------------------|----------------------|--------------|----------------------|----------------------|---------------|

Q70 Which of the following best describes your current work?

(Please tick one box on each line)

| | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree |
|---|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|
| I feel fairly well satisfied with my present job | <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"/> |
| 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"/> |
| I find my job to be very stressful | <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"/> |

Q71 Assume that your work ability at its 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 tick one box)*

| | | | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| <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"/> |

Q72 How do you rate your current work ability with respect to the **physical** demands of your work? *(Please tick one box)*

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

Q73 How do you rate your current work ability with respect to the **mental** demands of your work? *(Please tick one box)*

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

Q74 Is your illness or injury a hindrance to your current job? (*tick 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 sometimes slow down my work pace or change my work methods. | <input type="checkbox"/> |
| I must often 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"/> |

Q75 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 tick 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"/> |

Q76 Do you believe that – from the standpoint of your health – you will be able to do your current job **two years from now**? (*Please tick one box*)

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

Q77 Have you recently been able to enjoy your regular daily activities? (*Please tick one box*)

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

Q78 Have you recently been active and alert? (*Please tick one box*)

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

Q79 Have you recently felt yourself to be full of hope for the future? (*Please tick one box*)

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

Q80 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

| | Strongly disagree | | | Strongly agree | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|--|
| <i>(Please tick <u>one</u> box on each line)</i> | | | | | | |
| Some people in my workplace feel I have less ability because of my age. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | |
| Younger people find it easier to work at my workplace than older people do. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | |
| My manager expects me to do poorly because of my age. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | |
| At my workplace, people my age often face biased evaluations. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | |
| My age does not affect people's perception of my ability. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | |

Q81 Please indicate how much you agree or disagree with the following statements.

| <i>(Please tick <u>one</u> box on each line)</i> | Strongly disagree | | | | Strongly agree | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| I value being a member of my age group. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 | <input type="checkbox"/> 7 |
| My age group membership is important to me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 | <input type="checkbox"/> 7 |
| My age group is central to who I am as a person. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 | <input type="checkbox"/> 7 |
| I have a strong sense of belonging to my own age group. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 | <input type="checkbox"/> 7 |
| I identify with being a member of my age group. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 | <input type="checkbox"/> 7 |

Q82 Please indicate to what degree you agree with each item.

| <i>(Please tick <u>one</u> box on each line)</i> | Totally disagree | | | | Totally agree |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Older workers are passed over or left out in cases of promotion or internal recruitment. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Older workers do not have equal opportunities for training during work time. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Younger workers are preferred when new equipment, activities or working methods are introduced. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Older workers less often take part in development appraisals with their superior than younger workers. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Older workers have less wage increases than younger workers. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| 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"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q83 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?

(Please tick one box on each line)

| | Yes, I have access to this and I do this | Yes, I have access to this but I do not do this | No, I do not have access to this | N/A |
|---|--|---|----------------------------------|--------------------------|
| 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. | <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 a paid leave for care giving or other personal or family/whānau responsibilities (e.g., parental or elder care giving 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. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q84 To what extent do you have access to the flexible work options you need to fulfil your work and personal needs? (Please tick one box)

| Not at all | To a limited extent | To a moderate extent | To a great extent |
|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q85 The following statements refer to your current occupation. Please indicate the extent to which you disagree or agree with each statement.

(Please tick one box on each line)

| | Strongly disagree | | | | Strongly agree |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| I have constant time pressures due to a heavy work load. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I have many interruptions and disturbances while performing my job. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Over the past few years, my job has become more and more demanding. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I receive the respect I deserve from my superior or a respective relevant person. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| My job promotion prospects are poor. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I have experienced or I expect to experience an undesirable change in my work situation. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| My job security is poor. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Considering all my efforts and achievements, I receive the respect and prestige I deserve at work. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| | Strongly disagree | | | | Strongly agree |
| Considering all my efforts and achievements, my job promotion prospects are adequate. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Considering all my efforts and achievements, my salary/income is adequate. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I get easily overwhelmed by time pressures at work. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| As soon as I get up in the morning I start thinking about work problems. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| When I get home, I can easily relax and 'switch off' work. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| People close to me say I sacrifice too much for my job. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Work rarely lets me go, it is still on my mind when I go to bed. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| If I postpone something that I was supposed to do today, I'll have trouble sleeping at night. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q86 Please indicate how much you agree or disagree with the following statements about your workplace.

(Please tick one box on each line)

| | Strongly disagree | | | | | | | Strongly agree | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 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"/> | <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"/> | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I worry about the loss of investments I have made in 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"/> | <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"/> | <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"/> | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I do not feel a 'strong' sense of belonging to 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"/> | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| If I wasn't a member of this organisation/business, I would be sad because my life would be disrupted. | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Strongly disagree | | | | | | | Strongly agree | | | | | | |
| I am loyal to this organisation/business because I have invested a lot in it, emotionally, socially, and economically. | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I often feel anxious about what I have to lose with 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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sometimes I worry about what might happen if something was to happen to this organisation/business and I was no longer a member. | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am dedicated to this organisation/business because I fear what I have to lose in 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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel that I owe this organisation/business quite a bit because of what it has done 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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My organisation/business deserves my loyalty because of its treatment towards 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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel I would be letting my co-workers down if I wasn't 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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am loyal to this organisation/business because my values are largely its values. | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| This organisation/business has a mission that I believe in and am committed to. | <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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel it is 'morally correct' to dedicate myself 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"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q87 **PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS** fully 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 tick 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"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| At my job, I feel strong and vigorous. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| I am enthusiastic about my job. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| My job inspires me. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| When I get up in the morning, I feel like going to work. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| I feel happy when I am working intensely. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| I am proud of the work that I do. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| I am immersed in my work. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |
| I get carried away when I'm working. | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |

Q88 Please read the following statements and indicate how each statement relates to the work you usually do.

(Please tick one box on each line)

| | Strongly disagree | | | | Strongly agree |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| The work I do on this job is very important to me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| My job activities are personally meaningful to me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| The work I do on this job is worthwhile | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| My job activities are significant to me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| The work I do on this job is meaningful to me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I feel that the work I do on my job is valuable. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q89 The following questions ask about opportunities for training available to you.

(Please tick one box on each line)

| | Yes | No |
|--|----------------------------|----------------------------|
| Have you received training from your <u>employer/business</u> in the past 12 months? | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| Have you been offered training by your <u>employer/business</u> , but not trained in the past 12 months? | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| Have you ever been offered training by your <u>employer/business</u> ? | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |

Q90 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS Opportunities in your present employment situation:

| | Strongly disagree | | | Strongly agree | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <i>(Please tick <u>one</u> box on each line)</i> | | | | | | |
| 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"/> |

| | Strongly disagree | | | Strongly agree | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 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"/> |
| My organisation has stated policies on the amount and type of training the employees can expect to receive. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am aware of the amount and type of training that my organisation is planning for me in the coming year. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| This organisation provides access to training. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q91 How often do you consider leaving your current job? *(Please tick one box)*

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

Q92 What is the likelihood that you will be looking for a new job within the next year? *(Please tick one box)*

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

Q93 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 tick 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"/> |
| 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"/> |

Q94 At what age do you intend to permanently retire from paid work?

| | | | | | |
|----------------------|----------------------|--------------|----|--------------------------|---|
| <input type="text"/> | <input type="text"/> | Years of age | OR | <input type="checkbox"/> | I never intend to retire from paid work |
|----------------------|----------------------|--------------|----|--------------------------|---|

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

Q95a From all sources of income, what do you expect your annual personal income before tax to be this financial year?
(Please tick one box)

| | |
|-----------------------------|------------------------------|
| <input type="checkbox"/> 1 | loss |
| <input type="checkbox"/> 2 | zero income |
| <input type="checkbox"/> 3 | \$1 - \$5,000 |
| <input type="checkbox"/> 4 | \$5,001 - \$10,000 |
| <input type="checkbox"/> 5 | \$10,001 - \$15,000 |
| <input type="checkbox"/> 6 | \$15,001 - \$20,000 |
| <input type="checkbox"/> 7 | \$20,001 - \$25,000 |
| <input type="checkbox"/> 8 | \$25,001 - \$30,000 |
| <input type="checkbox"/> 9 | \$30,001 - \$35,000 |
| <input type="checkbox"/> 10 | \$35,001 - \$40,000 |
| <input type="checkbox"/> 11 | \$40,001 - \$50,000 |
| <input type="checkbox"/> 12 | \$50,001 - \$60,000 |
| <input type="checkbox"/> 13 | \$60,001 - \$70,000 |
| <input type="checkbox"/> 14 | \$70,001 - \$100,000 |
| <input type="checkbox"/> 15 | \$100,001 - \$150,000 |
| <input type="checkbox"/> 16 | \$150,001 - \$200,000 |
| <input type="checkbox"/> 17 | \$200,001 or more |

Q95b From all sources of income, what do you expect your annual household income before tax to be this financial year?
(Please tick one box)

| | |
|-----------------------------|------------------------------|
| <input type="checkbox"/> 1 | loss |
| <input type="checkbox"/> 2 | zero income |
| <input type="checkbox"/> 3 | \$1 - \$5,000 |
| <input type="checkbox"/> 4 | \$5,001 - \$10,000 |
| <input type="checkbox"/> 5 | \$10,001 - \$15,000 |
| <input type="checkbox"/> 6 | \$15,001 - \$20,000 |
| <input type="checkbox"/> 7 | \$20,001 - \$25,000 |
| <input type="checkbox"/> 8 | \$25,001 - \$30,000 |
| <input type="checkbox"/> 9 | \$30,001 - \$35,000 |
| <input type="checkbox"/> 10 | \$35,001 - \$40,000 |
| <input type="checkbox"/> 11 | \$40,001 - \$50,000 |
| <input type="checkbox"/> 12 | \$50,001 - \$60,000 |
| <input type="checkbox"/> 13 | \$60,001 - \$70,000 |
| <input type="checkbox"/> 14 | \$70,001 - \$100,000 |
| <input type="checkbox"/> 15 | \$100,001 - \$150,000 |
| <input type="checkbox"/> 16 | \$150,001 - \$200,000 |
| <input type="checkbox"/> 17 | \$200,001 or more |

Q96 Do you currently receive New Zealand Superannuation or a Veteran's Pension? (Please tick one box)

| | | | | | |
|----------------------------|--------------------|----------------------------|--------------------|----------------------------|-----------|
| <input type="checkbox"/> 1 | Single rate | <input type="checkbox"/> 2 | Couple rate | <input type="checkbox"/> 3 | No |
|----------------------------|--------------------|----------------------------|--------------------|----------------------------|-----------|

Q97 How many people inside and beyond your household, excluding yourself, are dependent on you for their financial support?

| | | | | | |
|-------------------------------|----------------------|----------------------|----|----------------------------|---------------------------------------|
| Total number of people | <input type="text"/> | <input type="text"/> | OR | <input type="checkbox"/> 1 | I have no financial dependents |
|-------------------------------|----------------------|----------------------|----|----------------------------|---------------------------------------|

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

Q98 For the following questions, please indicate whether or not you have (or have access to) the item:

(Please tick one box on each line)

| | Yes, I have it | No, because I don't want it | No, because of the cost | No, for some other reason |
|---|----------------------------|-----------------------------|----------------------------|----------------------------|
| Telephone | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Washing machine | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| At least two pair of good shoes | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Suitable clothes for important or special occasions | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Personal computer | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Home contents insurance | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Enough room for family/whānau to stay the night | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q99 For the following questions, please indicate whether or not you do the activity:

(Please tick one box on each line)

| | Yes, I do it | No, because I don't want to | No, because of the cost | No, for some other reason |
|--|----------------------------|-----------------------------|----------------------------|----------------------------|
| Keep the main rooms of your home adequately heated | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Give presents to family/whānau or friends on birthdays, Christmas or other special occasions | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Visit the hairdresser at least once every three months | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Have holidays away from home for at least a week every year | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Have a holiday overseas at least every three years | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Have a night out for entertainment or socialising at least once a fortnight | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| Have family/whānau or friends over for a meal at least once every few months | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q100 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?

(Please tick one box on each line)

| | Not at all | A little | A lot |
|--|----------------------------|----------------------------|----------------------------|
| Gone without or cut back on fresh fruit and vegetables to help keep down costs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Continued wearing clothing that was worn out because you couldn't afford a replacement | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Put off buying clothes for as long as possible to help keep down costs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Stayed in bed longer to save on heating costs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Postponed or put off visits to the doctor to help keep down costs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| NOT picked up a prescription to help keep down costs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Spent less time on hobbies than you would like to help keep down costs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
| Gone without or cut back on trips to the shops or other local places to help keep down costs | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

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.

Q101 Generally, how would you rate your material standard of living? (*Please tick one box*)

| | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| High | Fairly high | Medium | Fairly low | Low |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q102 Generally, how satisfied are you with your current material standard of living? (*Please tick one box*)

| | | | | |
|----------------------------|----------------------------|---|----------------------------|----------------------------|
| Very satisfied | Satisfied | Neither satisfied nor dissatisfied | Dissatisfied | Very dissatisfied |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q103 How well does your total income meet your everyday needs for such things as accommodation, food, clothing and other necessities? (*Please tick one box*)

| | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|
| Not enough | Just enough | Enough | More than enough |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q104 Below are statements that people have made about their standard of living. Please indicate how true these statements are for you.

(*Please tick one box on each line*)

| | Not true for me at all | | | | Definitely true for me |
|--|-----------------------------------|----------------------------|----------------------------|----------------------------|-----------------------------------|
| I can afford to go to a medical specialist if I need to. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I am able to visit people whenever I wish. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I am able to give to others as much as I want. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I am able to do all the things I love. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I expect a future without money problems. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| My choices are limited by money. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| I can afford to go to a dentist if I need to. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

YOUR PERSONAL SITUATION

Q105 What gender do you identify as? (*Please tick one box*)

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

Q106 Do you identify as: (*Please tick one box*)

| | | | |
|----------------------------|-----------------------|----------------------------|-----------------------|
| <input type="checkbox"/> 1 | Heterosexual/Straight | <input type="checkbox"/> 2 | Gay/Lesbian |
| <input type="checkbox"/> 3 | Bisexual | <input type="checkbox"/> 4 | Other sexual identity |
| <input type="checkbox"/> 5 | Uncertain | <input type="checkbox"/> 6 | Prefer not to answer |

Q107 PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|------------|
| D | D | / | M | M | / | 1 | 9 | Y | Y | DD/MM/YYYY |
|---|---|---|---|---|---|---|---|---|---|------------|

Q108 Which one of these statements is true about you? (Please answer for your **current**, marriage, partnership or situation). (Please tick 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. | | |

Q109 What is your highest educational qualification? (Please tick one box)

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

Q110 Please tick 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 tick the option at the top of the table.

| <i>(Please tick <u>all that apply</u>)</i> | Yes | Number 18yrs or over | | Number under 18yrs | |
|---|--------------------------|----------------------|--|--------------------|--|
| I live alone | <input type="checkbox"/> | | | | |
| My 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 grandchild(ren)/mokopuna | <input type="checkbox"/> | | | | |
| My friend(s) | <input type="checkbox"/> | | | | |
| My boarder(s) | <input type="checkbox"/> | | | | |
| Others (Please specify): | <input type="checkbox"/> | | | | |

Q111 Please indicate below which ethnic group or groups you belong to: (Please tick all that apply)

| | | | |
|--------------------------|---|--------------------------|---------|
| <input type="checkbox"/> | New Zealand European | <input type="checkbox"/> | Niuean |
| <input type="checkbox"/> | Māori | <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) | | |

Q112: PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS

| | | | |
|----------------------------|---------------------------------------|----------------------------|--------------|
| <input type="checkbox"/> 1 | New Zealand | <input type="checkbox"/> 5 | India |
| <input type="checkbox"/> 3 | Australia | <input type="checkbox"/> 4 | South Africa |
| <input type="checkbox"/> 6 | England | <input type="checkbox"/> 6 | Samoa |
| <input type="checkbox"/> 7 | People's Republic of China | <input type="checkbox"/> 8 | Cook Islands |
| <input type="checkbox"/> 9 | Other (Print the name of the country) | | |

Q112b If you were **not** born in New Zealand, please indicate below the approximate date that you first arrived to live in New Zealand.

| | | | | | | | |
|---|---|-----------------|---|---|---|---|------------------|
| M | M | Month (e.g. 04) | Y | Y | Y | Y | Year (e.g. 1985) |
|---|---|-----------------|---|---|---|---|------------------|

If you have Māori ancestry, continue with Q113, if you DO NOT, please turn to the last page.

Q113 Do you identify as Māori? (Please tick one box)

| | | | |
|----------------------------|-----|----------------------------|----|
| <input type="checkbox"/> 1 | Yes | <input type="checkbox"/> 2 | No |
|----------------------------|-----|----------------------------|----|

Q114 How many generations of your Māori ancestry can you name? (Please tick one box)

| | | | |
|----------------------------|------------------------------------|----------------------------|------------------------------|
| <input type="checkbox"/> 1 | 1 generation (parents) | <input type="checkbox"/> 2 | 2 generations (grandparents) |
| <input type="checkbox"/> 3 | 3 generations (great-grandparents) | <input type="checkbox"/> 4 | More than 3 generations |

Q115 In terms of your involvement with your whānau, would you say that your whānau plays:

| | | | |
|---------------------------------------|----------------------------------|----------------------------------|---------------------------------------|
| A very large part in your life | A large part in your life | A small part in your life | A very small part in your life |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q116 How often have you been to a marae over the past 12 months? (Please tick one box)

| | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------------|
| Not at all | Once | A few times | Several times | More than once a month |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

Q117 Do you have an interest in Māori land as an owner, part/potential owner or beneficiary?

| | | | | | |
|------------|----------------------------|-----------|----------------------------|----------------------------|----------------------------|
| Yes | <input type="checkbox"/> 1 | No | <input type="checkbox"/> 2 | Not sure/don't know | <input type="checkbox"/> 3 |
|------------|----------------------------|-----------|----------------------------|----------------------------|----------------------------|

Q118 This question considers your contacts with people. In general, would you say your contacts are with:

| | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|
| Mainly Māori | Some Māori | Few Māori | No Māori |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Q119a Do you know the name(s) of your iwi (tribe or tribes)?

| | | | |
|----------------------------|-----|----------------------------|----|
| <input type="checkbox"/> 1 | Yes | <input type="checkbox"/> 2 | No |
|----------------------------|-----|----------------------------|----|

Q119b If yes, please give the name(s) of your iwi (tribe or tribes)

Q120 How would you rate your overall ability with Māori language? (Please tick one box)

| | | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Excellent | Very good | Good | Fair | Poor | None |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 | <input type="checkbox"/> 6 |

PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS
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 | \$926.08 | \$24,078.08 |
| Single, sharing accommodation | \$851.10 | \$22,128.60 |
| Married person or partner in a civil union or de facto relationship | \$664.68 | \$17,281.68 |
| Married or in a civil union or de facto relationship, both qualify | \$701.52 | \$18,239.52 |

**PHYSICAL HEALTH, PHYSICAL ACTIVITY AND DEPRESSION AMONG OLDER ADULTS
INTERVIEWS AND CONTACT INFORMATION**

To better understand people's experiences we sometimes invite participants in the Health, Work and Retirement study to take part in face to face interviews.

If you are interested in being asked to participate in an interview (after receiving more information about it), please tick the box below and provide a phone number and/or email address at which you could be contacted.

In the next three years, we will be most likely to request interviews with people who are informal caregivers and those who have, or who have considered, starting a business after the age of 50.

Yes, I am willing to be contacted regarding an interview

Whether or not you are interested in an interview, please consider providing us with a phone or email contact, in case you are no longer reachable at your current address.

These details are stored separately to survey data and only used when we have no other way of reaching you.

Phone number:

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

PLEASE PRINT YOUR EMAIL ADDRESS IN CAPITAL LETTERS – THANK YOU

Email address:

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |