An Examination of the Relationships between Activity Participation, Social Relations, and Meaning in Life among Older Adults in Aotearoa New Zealand

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Abstract

Previous research suggests that a sense of meaning in life (MIL) contributes to physical and psychological well-being among older adults. Given the positive outcomes associated with MIL, it is important to identify sources of MIL and understand how MIL arises among older adults. The increasing proportions of older adults engaging in employment, volunteering, and informal caregiving suggests that it may be important to consider the influence of these activities on MIL. Furthermore, while there is evidence that receiving social support enhances MIL, there does not appear to be any research on the effects of providing social support on an individual's sense of MIL. This research examines relationships between health, MIL, and volunteering, employment, and informal caregiving, and the role of social support in these relationships among a sample of older adults in Aotearoa New Zealand. In addition, this research aims to examine how different aspects of caregiving relate to MIL among older adults who are informal caregivers.

This research was secondary data analysis of a large sample of community-dwelling older adults in Aotearoa New Zealand. Relationships were examined using standard quantitative statistical procedures with linear hierarchical regression being the primary technique. MIL was found to be associated with psychological but not physical health with the exception of older adult informal caregivers for whom MIL was associated with both dimensions of health. Consistent with previous research, volunteering was associated with higher MIL among older adults and this relationship was mediated by the provision of social support. Results also indicated that informal caregiving may enhance MIL indirectly through the provision of social support. However, no evidence was found that participation in paid employment is associated with either higher or lower MIL. Among

informal caregivers, perceived social support was the only aspect of caregiving which remained a significant predictor of MIL after controlling for demographic and health variables.

The research suggests MIL is an important resource for the psychological health of older adults, supporting the incorporation of MIL into psychological interventions for this population. Volunteering and other roles which present opportunities to provide support for others may be particularly effective for enhancing MIL. Further research is needed to investigate how different aspects of employment relate to MIL in order to better understand how employment may be structured to contribute to MIL. Considering the socio-historical context in which older adulthood is lived out, the research contributes to the growing body of literature on MIL, providing insight into how MIL might be promoted among older adults.

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Preface

I have had a long standing interest in working with the older adult population, an interest which formed the foundation for my research. In addition given the ageing population, working as a psychologist I am increasingly likely to work with older adults in a clinical capacity. It is important to ensure mental health professionals are able to meet the needs of this population and provide effective therapeutic interventions. The focus on meaning in life developed after reading the writings of Viktor Frankl, one of the first to theorise about meaning in life, which I found extremely interesting and engaging.

With these foundations I started to form the current research project, reading key theorists in this area to develop an understanding of theories regarding MIL, the current state of MIL research, and the areas in need of further research. Concurrently, I began researching ageing and older adulthood to gain an understanding of the current research in this area. From my initial research I formulated tentative research questions and approached the Massey University Health and Ageing Research Team (HART) who granted permission and access to data from the Health, Work, and Retirement (HWR) study, the flagship longitudinal study of the HART. A process of moving between the data and the research ensued until my tentative research questions could be solidified, forming the primary section of the research project: *An Examination of relationships between MIL, employment, volunteering, informal caregiving, and provision of social support*. Further research and examination of the data, suggested opportunities for additional research questions and an additional two sections, examining health, meaning in life, and caregiving, were developed to supplement and expand the core section of the project.

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Chapter 1: Older Adulthood

This chapter provides a brief overview of notions of older age and how 'old' has been defined and perceived. The demographic trend of population ageing and its implications are briefly introduced to provide a context for justifying the emphasis on enhancing well-being among older adults.

1.1 What is Older Adulthood?

While it is accepted that human beings age and at some point become labelled 'old', the question of the meaning of 'old' remains. In the majority of contexts, old age is defined in chronological terms. According to this approach, older age is often considered to begin at 65 and can be divided into three subcategories: the young-old (aged 65-74); the old-old (aged 75-84); and the oldest-old (aged 85+; Cannon, 2015). Chronological age is the most frequently used and basic means of defining old age and is particularly advantageous for research, demographic purposes, and policy development (Phillipson, 2013).

However, chronological age is not the only approach to defining old age and has been challenged as overly simplistic. First, there is no evidence of any distinct changes that occur at age 65 or any other chronological age to set them apart from other ages (Phelan, 2010). Additionally, use of the age 65 as the entry point into older age is not universal but is linked to cultural, political, and social factors. In Aotearoa New Zealand, old age is linked to superannuation[1] eligibility which begins at 65 (Ministry of

[1] New Zealand Superannuation (NZ Super) is a government social pension scheme consisting of a regular, non-contributory, tax-funded payment made to individuals who are aged 65 and older and who meet further eligibility criteria such as residency. NZ Super is relatively unique among pension schemes in that it is not means tested but given to all eligible individuals irrespective of assets, employment record, or income.

Social Development, 2016a). In contrast, the United Nations (2013) define an older person as one aged 60+ and in Cambodia, for example, old age is tied to family roles and in particular the birth of the first grandchild rather than chronological age (Dubus, 2014). Similarly, chronological markers of old age have changed over time under the influence of various socio-cultural and political factors (Phillipson, 2013; Thane, 2000). For example, in Britain, pension ages and retirement ages became the generally accepted definition of old age when they were introduced. Prior to this the Poor Laws of the early 1800's described labourers as old at 50 however old age was more often defined in terms of incapacity to work rather than tied to a specific age (Thane, 2000). Finally, perceptions differ from person to person and many individuals aged 65 and over do not consider themselves old (Thane, 2000). This suggests that although an individual's chronological movement through years may be inevitable, 'old' may be best considered a social category with fluid boundaries which are determined by cultural, economic, social, and political factors, and personal choice.

Although chronological age is the most frequently used and basic means of defining age in research, there are a variety of other approaches. Using chronological age as a marker of old age fails to recognise and capture the great diversity among older adults in terms of gender, ethnicity, cognitive capacity, health, activity levels, and functionality across various life domains (Wilson, 2000). Some of this diversity is better captured when old age is defined biologically, in terms of particular biological processes and physical characteristics (Thane, 2000), or functionally, in terms of an individual's ability to carry out particular functions and roles (Moody & Sasser, 2015). Although these approaches are more sensitive to some of the diversity among older adults, they still fail to take into account personal experiences of age. Consequently, subjective age, how young or old individuals experience themselves to be, has emerged as an important approach to

defining and studying older age (Montepare, 2009). Feeling younger than one's chronological age has been associated with lower psychological distress (Keyes & Westerhof, 2012; Shrira, Bodner, & Palgi, 2014), lower mortality (Kotter-Grühn, Kleinspehn-Ammerlahn, Gerstorf, & Smith, 2009), and better physical functioning (Montepare, 2009), highlighting the importance of understanding subjective experiences of ageing and older age. Finally, old age may be defined culturally, an approach based on everyday perspectives on and perceptions of older age (Thane, 2000). These alternatives are valid and important approaches to defining old age which can each contribute to the understanding of older age. However, consistent with policy and previous research on ageing in Aotearoa New Zealand, for the purposes of this study 'older adult' is defined as an individual aged 65 or above. This approach is taken while recognising that there is great diversity among older adults; that 65 is an arbitrary marker; and that one does not automatically become 'old' at this age. Though older adult will be defined as 65 or above, the minimum age of the current study is 60 in order to include those who are moving into older adulthood.

1.2 An Ageing Population

Worldwide, the population is ageing at a faster rate than ever (World Health Organisation [WHO], 2015). Growth is occurring in each of the chronological age categories but will be most pronounced amongst the oldest-old (United Nations, 2009). Following this global trend, the population of New Zealand is also ageing; it is estimated that by the year 2051 around 26% of the population will be over the age of 65 and this growth trend is expected to continue (Statistics New Zealand, 2007a). Also consistent with global patterns, most growth is expected amongst the old-old, those aged 85+ (Statistics New Zealand, 2000). These demographic shifts can be attributed to three primary factors: increased longevity, lower fertility, and the movement of the large

birth cohorts of the 1950s, 1960s, and 1970s into older adulthood (Statistics New Zealand, 2006).

Although ageing is predicted to occur across the whole population of Aotearoa New Zealand[2], geographical and ethnic differences are expected (Statistics New Zealand, 2006). All regions of the South Island are expected to have older populations while the Auckland region is expected to have the youngest population in comparison to other regions. Regional differences can be attributed to variations in migration patterns, fertility, and current age structure. Figure 1 portrays the projected proportion of Aotearoa New Zealand's population aged 65+ by ethnicity. Although all ethnic groups are expected to age, Māori[3], Pacific Island, and Asian populations are likely to remain younger compared to the New Zealand European population due to mortality and fertility differences (Statistics New Zealand, 2006).

[2] Aotearoa New Zealand is an island nation of approximately 4.6 million people (Statistics New Zealand, 2013a). The nation consists of two main islands, the North Island and South Island, as well as multiple smaller islands and is divided into sixteen regions. The majority of the population (76%) live in the North Island while the most densely populated region is the Auckland region (located in the North Island) which holds approximately 34% of the total population (Statistics New Zealand, 2013a).

[3] Māori are the indigenous people of Aotearoa New Zealand.

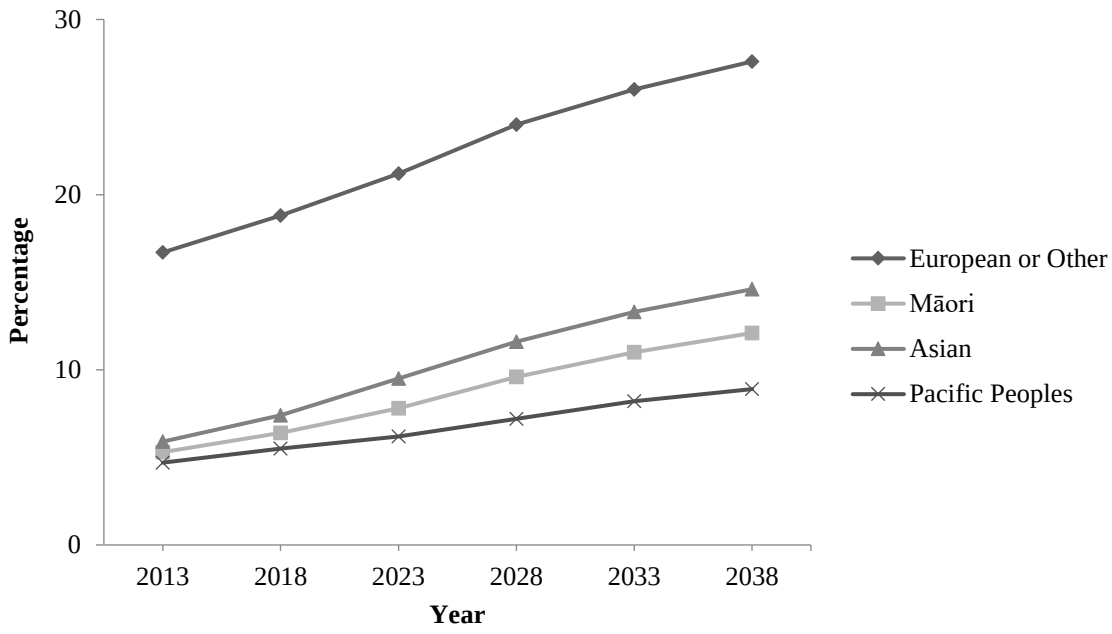

Figure 1. National population projections of adults aged 65+ by ethnicity. Data retrieved from Statistics New Zealand (2017c).

Population ageing has implications across a number of domains (Koopman-Boyden & Waldegrave, 2009). In terms of the labour market, employers will need to adjust to an increasingly older work force as well as ageing consumers. Considerations on how to retain older workers and enhance their participation in the workforce will be important as the more traditional working age population shrinks. Similarly, housing that is secure, suitable, meets the needs of older adults, and supports ageing in place will become increasingly important. As the older adult population is one of the primary users of healthcare services, demand for these services is likely to increase. Population ageing is also expected to have fiscal implications with New Zealand Superannuation costs projected to rise from 4% of Gross Domestic Product (GDP) to higher than 8% GDP (New Zealand Treasury, 2003). Finally, as the older adult population increases it is predicted that they will have an increasing political influence and the needs of this population will become a higher priority for governments (Koopman-Boyden & Waldegrave, 2009).

1.3 Perceptions of Old Age

Despite variations in how old age might be defined and studied, perceptions of old age and population ageing in modern Western societies are predominantly negatively biased. To be old is frequently associated with being frail, incompetent, and dependent (Moody & Sasser, 2015; Williamson, 2001) and older age is seen as a time of inevitable loss, disease, deterioration, and death (Bytheway, 1995; Williamson, 2001). Such old age stereotypes are not modern phenomena, as early as the third century BC Aristotle described old age as 'cold and dry' (Olshansky & Carnes, 2001, p. 31). Understanding old age in this negative manner can have severe consequences for those perceived to be old as such stereotypes manifest as prejudiced attitudes and discrimination in employment, housing, the media, healthcare, politics, and civic engagement (Raynor, 2015). Stereotypes may also be internalised and negatively influence thoughts, beliefs, and behaviour of older adults (Chrisler, Barney, & Palatino, 2016). In 1969 Robert Butler coined the term 'ageism' to describe this systematic stereotyping and discrimination of individuals because they are perceived as old (Achenbaum, 2015). The irony of ageism has been noted in that, unlike racism and sexism, perpetrators of ageism are likely to become victims as they themselves become old (Stuart-Hamilton, 2012). This possibility is increasingly probable as population demographics change and increasing numbers of adults live to older ages.

As with old age itself, the implications of population ageing have been portrayed negatively and met with fear, particularly in relation to economic consequences and society's capacity to meet the needs of the older population. It is feared that the rising costs of healthcare and superannuation along with a shrinking workforce will place an unsustainable demand on the economy (Thane, 2000). This situation is generally described in both popular culture and academic literature in catastrophic terms such as a

'demographic time bomb' (Herbermann & Miranda, 2012) and the 'pension crisis' (Marin, 2013). Such portrayals of population ageing have prevailed despite a lack of evidence to support them (Williamson, 2001) and they further reinforce the stereotype of older adults as a burden and old age as an experience to be feared (Thane, 2000).

However, alternative optimistic views have slowly developed in response to the stigma associated with ageing and old age. More optimistic approaches focus on how the ageing population reflects the successes of the 20th and 21st centuries in terms of improved living conditions, quality of life, healthcare, and well-being, and medical advances. Rather than perceiving older adults as a burden, their knowledge, experience, capacities, value, and skills are emphasised (Boston & Davey, 2006; Thane, 2000) and enhancing the wellbeing of this population becomes a primary focus (e.g., Henricksen & Stephens, 2010). As Koopman-Boyden and Waldegrave (2009) point out, the contribution of older adults to wider society is often overlooked. Older adults contribute significantly through the payment of taxes, volunteer work, market-place expenditure, their assets, childcare, cultural contributions, and increasingly, their on-going participation in the work force.

One of the most influential ideologies which emphasises a more optimistic view of older adulthood is that of successful ageing. Rowe and Kahn (1997) introduced the concept of successful ageing to challenge the traditional dichotomisation of ageing as either pathological or non-pathological. They distinguished between ageing that is 'usual' and ageing that is 'successful'. Usual ageing consists of normal age-related declines in functioning whereas successful ageing consists of little or no functional declines. Specifically, according to Rowe and Kahn's model, successful ageing has three inter-related components: high cognitive and physical functioning, low probability of disease and disability, and full engagement with life through interpersonal

relationships and various productive activities. The concept of successful ageing has been popular and many similar concepts have emerged in research, theory, and social policy including ‘positive ageing’ (Ministry of Social Development, n.d.), ‘healthy ageing’ (WHO, 2015), ‘active ageing’ (Katz & Calasanti, 2015), and ‘ageing well’ (Bowling, 2005).

The influences of successful ageing ideals are evident in psychological research and practice. For example, positive psychology takes a strengths based approach and focuses on the positive potential of older adults and the optimisation of the well-being of this population (Hill & Smith, 2015). Likewise, in clinical psychology research there has been a shift in focus from only addressing symptoms of mental illness among older adults to examining how variables such as happiness might be enhanced (e.g., Khazaee-pool, Sadeghi, Majlessi, & Rahimi Foroushani, 2015). Lavretsky (2014) outlines how research, practice, and care involving older adults can be directed towards emphasising many positive aspects associated with ageing and improving the quality of life and well-being of older adults.

Beyond the social sciences, principles of successful and productive ageing are evident in wider social policies. In 2001 the NZ government implemented the New Zealand Positive Ageing Strategy with the aim of promoting the value of older adults and supporting and improving continued participation of older adults in the community. At a broad level, the Strategy involved developing a framework of principles of positive ageing; establishing positive ageing goals; community consultation to identify action areas; assessment of current governmental policies; developing action plans to address the identified goals; and ongoing monitoring (Ministry of Social Development, 2001a). Similar policies are seen in other nations and organisations such as Australia’s National Strategy for an Ageing Australia (Andrews, 2001), Ireland’s National Positive Ageing

Strategy (Department of Health, 2013), and the World Health Organization's Active Ageing Policy Framework (World Health Organisation, 2002).

A second ideology closely aligned with successful ageing is that of productive ageing. Notions of productive ageing arose in response to a number of structural and societal factors including improved health of older adults, pressures on healthcare spending, rising education levels among older adults, and increasing emphasis on values such as independence and productivity (Moody, 2001). Productive ageing emphasises the capacity of older adults to contribute to society through productive activities. The focus is on engagement in activities that produce some form of goods or service which have economic value of some form as opposed to activities that are beneficial or enriching for the individual alone, such as watching television (Moody, 2001). Notions of successful and productive ageing challenge negative stereotypes of older adulthood and instead highlight the value of older adults and their capacity to contribute to society (Katz & Calasanti, 2015).

However, there are also substantial shortcomings associated with these approaches to ageing. Firstly, they have been criticised for presenting unrealistic ideals of ageing which ignore the realities of change and mortality. The many individuals who do not meet this ideal are, implicitly or explicitly, portrayed as failures by themselves or others (Lamb, 2014). Furthermore, these are ideologies based on Western values of success, productivity, and independence. For example, in Rowe and Kahn's (1997) model, responsibility for ageing successfully rests almost exclusively with the individual. However, this ignores structural and societal factors which impact over a lifetime and permit or restrain an individual from accessing resources and developing and maintaining a lifestyle conducive to successful ageing (Katz & Calasanti, 2015). Consequently, the individual bears the blame for not ageing successfully.

Another limitation associated with these more recent ideological developments is the neglect of the existential needs of older adults. As noted, Rowe and Kahn's (1997) concept of successful ageing emphasises optimum physical and mental functioning and continued engagement while productive ageing focuses on ongoing contribution through productive activity. As Reker and Wong (2012) note, research on factors contributing to successful ageing has focused on personal or lifestyle characteristics, social resources, factors in the wider environment, and coping strategies while existential factors have been relatively neglected. Consequently, efforts enhance the well-being of older adults have entailed directing resources towards meeting their physical, economic, and social needs. An example of this can be seen in the New Zealand Positive Aging Strategy which has the goals of: adequate income; affordable and accessible health services; secure and appropriate housing; affordable and accessible transport; secure and safe ageing in place; culturally appropriate services, positive attitudes towards ageing; flexible employment options; meeting the needs older adults in rural communities; and increasing opportunities for community participation (Ministry of Social Development, 2001b). While these areas are critical, the importance of more existential needs and issues, such as spirituality, human suffering, religiousness, and meaning in life, have been overlooked despite evidence, as will be discussed in Section 2.3, of the importance of these domains in regards to overall well-being.

These ideologies of ageing are located in a Western cultural context; ageing and old age are perceived differently in other cultural groups. In Māori culture, older generations are considered vital for carrying the integrity, status, and tradition of the people (Durie, 1999). Older adults are often ascribed important roles such as spokesperson for an iwi (tribe) or family, preserving the culture, and mentoring younger adults, although these roles are not unique to older members of the community. In very old age, individuals

are relieved of these roles and responsibilities and are regarded by younger generations as *taonga* (treasures; Durie, 1999). Māori respect for older generations is exemplified in the Kaumatua role. Kaumatua are esteemed elders in Māori society, they are considered repositories of knowledge and tradition and are responsible for preserving and transmitting knowledge and tradition to younger generations. As Kaumatua are regarded as wise and experienced, they also fulfil leadership roles in their whānau (family), hapu (sub-tribe), and iwi (tribe); they act as spokespeople; make important decisions; play a prominent role in conflict resolution; and nurture younger generations (Higgins & Meredith, 2011).

In East Asian cultures, the Confucian principle of *xiao* (filial piety) emphasises obedience to, care for, and respect of one's elders and especially one's parents (Sik Hung Ng, 1998). Traditionally, in most Nigerian cultural groups, older adults are believed to be endowed with wisdom, they are valued and held in high esteem, and respected by younger generations (Modo, 2005). Advice is often sought from older adults in regards to important matters such as situations of war, coronations, and marriages. Selected elders are also consulted by heads of state in order to provide legitimacy to governmental decisions (Modo, 2005). These ideologies and traditions emphasise respect for older adults and the duty of younger generations to value, obey, care, and provide for older generations. However, although these ideologies and traditions have functioned well, they are currently threatened by a range of socio-historical processes such as industrialisation, dislocation, urbanisation, and migration (Higgins & Meredith, 2011; Modo, 2005; Ng, 1998).

Despite ideologies, traditions, and expectations which place older adults in high regard, research suggests that these do not necessarily lead to positive attitudes towards older adults and ageing. Studies have found attitudes towards older adults and ageing to be more negative among Eastern and collectivist cultures compared to Western cultures characterised by individualism (North & Fiske, 2015; Ota, Giles, & Gallois, 2002), while another study has found more negative attitudes among Western cultures (Löckenhoff et al., 2009). Other research found no differences in attitudes towards older adults and ageing (Ng, 2002). Xin et al. (2016) provide a possible reason for these discrepancies. Examining correlations between individual values, cultural values, and attitudes towards older adults, Xin et al. (2016) found that personal values rather than cultural values have a greater influence on attitudes towards ageing and older adults. These findings suggest that the expectations and traditions of a culture do not necessarily translate into more positive attitudes towards older adults and the process of ageing.

1.5 Chapter Summary

In summary, definitions of old age are fluid and influenced by social, historic, cultural, economic, and personal factors. Despite the fluidity of old age definitions, perceptions of old age in modern Western societies are predominantly negative. However, as the population continues to age, issues relating to the older adult population will become increasingly pertinent. Although population ageing will have inevitable implications and challenges, these can be approached optimistically. Theoretical and ideological developments such as successful ageing and productive ageing represent a move in this direction and shift the focus from viewing the older adult population as problematic and dependent towards positively valuing older adults, dispelling widespread negative stereotypes and stigma, focusing on the strengths and assets of older adults, and on

enhancing the well-being of this population. As a result of these ideological shifts, many steps have been taken to enhance the well-being of older adults. Despite the positive outcomes, there are ongoing limitations associated with these approaches including unrealistic ideals of ageing, reliance on Western values of individuality and independence, and the continued neglect of existential factors despite the importance of such factors for overall well-being. One such existential factor is a sense of meaning in life.

Chapter 2: Meaning in Life

The subject of meaning in life has a long history in literature, philosophy, and religion (Batthyany & Russo-Netzer, 2014). Psychology and social sciences have been slower to focus on meaning, partially because the concept of meaning has been so closely associated with the question of the meaning of life, a question which is considered beyond the scope of empirical science (Reker, 1994). However, although this question cannot be answered by psychology, the nature of meaning and the implications of meaningfulness (and meaninglessness) are amenable to empirical examination. Consequently, meaning in life has become an important construct in psychology as the ramifications of a sense of meaning for thought, behaviour, action, and well-being become increasingly clear (Debats, 2000). Within the discipline of psychology, interest in meaning originated in existential psychology with the theorising of Victor Frankl (1959) and has spread into other areas of psychology including positive psychology (e.g., Jurica, Barenz, Shim, Graham, & Steger, 2014), health psychology (e.g., White, 2004), and clinical psychology (e.g., Heisel, Neufeld, & Flett, 2016). This chapter reviews psychological theories of meaning in life; examines the construct of meaning in life and how the multiple dimensions of this construct have been researched; and provides justification for the study of meaning amongst older adults through a brief overview of the research pertaining to meaning and well-being.

2.1 Theories of Meaning

Frankl

The writings of Victor Frankl (1959) are considered the primary impetus for psychological theorisation and research into meaning in life. Frankl, an Austrian psychiatrist and neurologist, was held captive in German concentration camps during the Holocaust. This experience shaped his philosophical outlook and subsequent

theorisation and writing on meaning and the formalisation of his ideas into the logotherapy system of psychotherapy (Debats, 2000).

Franklian theory of meaning has three core concepts: inherent meaning in life, will to meaning, and freedom of will. Pertaining to the first concept of inherent meaning in life, Frankl (1959) considered the world to be intrinsically meaningful. Meanings, he proposed, are not created by humans; rather meaning is an objective reality which is discovered, perceived, and realised in each situation. The second core concept, will to meaning, encompasses the notion that the search for meaning is not a secondary process resulting from instinctual drives but is the primary and most powerful motivator for human beings. This concept arises from Frankl's understanding of the human person as possessing a spiritual dimension or 'spiritual core'. This feature sets humans apart from animals and it is from this spiritual core that the human desires to seek meaning and to transcend the self. The third concept, freedom to will, is the idea that individuals have the capacity to choose and to find meaning in what they do and experience. It is pursing and discovering meaning in life that enables individuals to overcome experiences of suffering. In contrast, Frankl proposed meaninglessness leads to a state termed 'noögenic neurosis', or an 'existential vacuum' characterised by emptiness and apathy. Importantly, Frankl asserted that experience of full meaning in life is only possible by transcending oneself and valuing something beyond the self.

Frankl (1959) also outlined the pathways to realisation of meaning. According to Frankl, meaning is realised through the actualisation of values which can be classified into three categories: creative, experiential, or attitudinal. The actualisation of creative values involves contributing or giving something to the world and in service of others. For example, creating an art work, giving birth to a child, and working in paid employment or volunteering. Frankl emphasised that it is not only the deed which is

important but also the motive. When oriented towards power or pleasure, meaning is not realised. The actualisation of experiential values involves experiencing something and/or encountering someone through sight, smell, hearing, taste, or in any other manner. Examples include being in the company of friends, reading a book, watching a sunrise, or enjoying tasty food. Importantly, discovering meaning by this pathway involves not only the experience but an openness to and appreciation of the experience. Finally, actualisation of attitudinal values involves one's attitude towards circumstances. This pathway involves relating to one's circumstances in a positive way. For example, suffering can be positively approached in a number of ways such as finding an important lesson in the experience; using it as an opportunity to be a strong role model; or continuing, in spite of the suffering, to make the most of life. It is this last pathway which is considered the most important in situations of unavoidable suffering and why, Frankl claimed, even in the absence of creative and experiential opportunities life does not cease to be meaningful (Frankl, 1959).

In summary, Frankl conceptualises meaning in life as a process of discovery within a world that is intrinsically meaningful. Meaning is not invented and can only be found outside the person. The search for personal meaning is considered the primary motive for human beings and pursing and realising meaning results in life satisfaction and fulfilment while the prolonged experience of meaninglessness results in poor psychological health.

Yalom

Yalom's (1980) approach to meaning is grounded in the existentialist paradigm and focuses on ultimate concerns which stem from human existence. Although there are differences between existential theorists, Yalom focused on four ultimate concerns or givens of human existence: death, freedom, isolation, and meaninglessness. The

concern of death involves an awareness that we will die. This awareness is present from a very young age and individuals may spend their lives coming to terms with the reality that they will die. The concern of freedom, in the existential sense, involves an understanding that the world and universe are not structured and have no inherent design and consequently one is ultimately responsible for one's own life, choices, and actions. The concern of isolation involves an awareness that although one may be engaged in relationships, no matter how close or deep those relationships are one is born alone and will die alone. Finally, the concern of meaninglessness, from the existentialist perspective, involves an awareness that life is essentially devoid of meaning and one must come to terms with this and create one's own meaning. These four givens, or ultimate concerns, can generate conscious and unconscious fears in the individual who faces them and, unless dealt with effectively, result in existential anxiety and psychological distress.

Meaning, according to Yalom (1980), is a response to existential anxiety. Meaning in life is created by the individual as a means of dealing with existential anxiety. By ascribing meaning to external events, the individual is able to gain a sense of security and stability in the face of existential anxiety generated by the realisation of ultimate meaninglessness. Yalom identified five activities which provide meaning: altruism, creativity, dedication to a cause, hedonism, and self-actualisation. However, creation of meaning is alone insufficient to protect against existential anxiety as most individuals are conscious that meanings are self-created. Consequently, full and total commitment to that created meaning is also required to protect one from anxiety. Thus, Yalom considers meaning to be a creation of the human mind which essentially serves as a defence mechanism to buffer existential anxiety.

Terror Management Theory

The Terror Management Theory (TMT) approach to meaning in life shares many similarities with Yalom's approach. TMT is a social psychological theory which links meaning with culture and self-esteem (Pyszczynsi, Greenberg, Solomon, Arndt, & Schimel, 2004). TMT proposes that humans, as intelligent and conscious beings, are able to comprehend their mortality and the inevitability of their death. The psychological conflict that arises from having a desire to live but knowing that death is inevitable results in a terror or death anxiety that is unique to humans (Pyszczynsi et al., 2004). From a TMT perspective, self-esteem is the primary buffer against death anxiety as it keeps the inevitability of death from conscious awareness and provides a symbolic immortality. Consequently, individuals strive to enhance their self-esteem (Pyszczynsi et al., 2004).

A primary avenue to enhanced self-esteem is culture. Cultures prescribe principles and standards and it is by living up to or surpassing these standards that self-esteem is enhanced. Culture can also enhance self-esteem in a less direct manner through meaning. Immersion in cultures imbues individuals with a sense of meaning by providing a sense of stability, order, and coherence, as well as values and beliefs to guide behaviour. The perception of meaning in life further enhances self-esteem (Tomer, 2014).

Thus, from a TMT perspective, meaning is provided through cultural systems. Meaning is not a primary goal or motivation but is a means of obtaining self-esteem which acts to manage the terror associated with the inevitability of death by keeping it out of conscious awareness.

Maslow's Humanistic Perspective

Maslow did not write directly about meaning but the concept of meaning has been associated with his concept of self-actualisation (Debats, 2000). Maslow (1943) sought to understand human potential and motivation and proposed that individuals are motivated to achieve certain needs. Maslow organised these motivational needs into a hierarchy suggesting that individuals must satisfy lower level needs before moving onto the next level. As lower level needs are satisfied, higher level needs emerge as motivators.

In Maslow's (1943) hierarchy, the highest level need is that of self-actualisation. Self-actualisation involves realising one's full potential and it is in self-actualisation that a person comes to find a life meaning which is of importance to them. According to Maslow's theory, individuals are free to choose meanings in life but optimal outcomes occur when meanings are chosen which match the individual's intrinsic values. Thus, similar to Frankl, Maslow also conceived of meaning as a motivational force. However, unlike Frankl, Maslow's theory considers meaning to be an intrinsic property, existing within an individual and only emerging as a primary motivator after more basic needs are fulfilled.

Erikson's Life Span Perspective

Erikson (1980) developed a psychosocial theory of development consisting of eight stages through which an individual passes from birth to older adulthood. Each stage is characterised by a psychosocial crisis and the successful resolution of the crisis results in the acquisition of virtues or ego strengths which are beneficial for facing further crises. In contrast, if the individual does not successfully resolve the crisis at one stage, they will have a reduced ability to face subsequent crises and are at risk of emotional distress and stagnation (lack of productivity and creativity). For example, the seventh

stage, adulthood, involves the psychosocial crisis of generativity vs stagnation (Erikson, 1980). Generativity consists of productivity, contribution to wider society, and nurturing the next generation. Stagnation, in contrast, consists of self-absorption and lack of productivity. The virtue that arises from successful resolution of this crisis is care. Initially crises were tied only to specific ages but are now considered a series of challenges which one may engage in and return to across the lifespan but which are more likely to arise at certain ages (Malone, Liu, Vaillant, Rentz, & Waldinger, 2016).

As with Maslow, Erikson did not directly theorise about meaning. However, each of his stages, particularly the adult stages, can be seen as primary sources of meaning for the individual passing through that stage. For example, in the seventh stage, generativity and passing on to the next generation become a primary source of meaning for the individual. Erikson's eighth and final stage suggests that reaching a sense of meaning in life is particularly crucial in older adulthood. The crisis at this stage is that of integrity vs despair which involves a time of introspection where the individual reviews their life and attempts to weave a coherent whole and ultimately see life as meaningful. Successful resolution results in integrity, a sense of contentment, fulfilment, and the virtue of wisdom. Unsuccessful resolution of this stage results in despair where experiences are perceived as failures and the individual struggles to perceive purpose and meaning in their life.

Baumeister

Baumeister's (1991) needs based approach to meaning represents a shift from the more philosophically grounded approaches of Frankl and Yalom. Baumeister defined meaning very generally as "shared mental representations of possible relationships among things, events, and relationships. Thus, meaning *connects* things" (p.15). Meaning, Baumeister proposed, exists in people's minds and in the social structures and

institutions people create. As meaning is a matter of connecting things, Baumeister suggests the concept of a web consisting of interconnecting strands as a visual metaphor for meaning. Meaning complexity is determined by the number of connections and associations within a web of meaning. For Baumeister, meanings are not qualitatively different but exist on a continuum of complexity with meaning in life being a very complex form of meaning compared to more basic meanings of, for example, words or sentences. Baumeister proposed two broad purposes of meaning: to discern patterns in the environment and so predict what might happen and to control one's self (as people use meaning to guide actions, make decisions, and regulate emotions).

Baumeister (1991) observed that, although very few individuals have a fully formed, coherent notion of the concept of meaning of life they still experience their lives as meaningful. That is, a philosophy of meaningfulness is not necessary for a life to be experienced as meaningful. Baumeister proposed instead that in order for life to be experienced as meaningful, one must meet four basic needs for meaning: purpose, value, efficacy, and self-worth. Purpose involves the need to be able to 'interpret present events in relation to future events'. Value involves being able to justify ones actions, both past and present, and regard them as good and right. Efficacy is the need to perceive oneself as in control, able, strong, and capable of making a difference and impacting the world in some way. Finally, self-worth involves perceiving oneself favourably as well as experiencing respect from others. According to Baumeister, when these needs are fulfilled, life is experienced as meaningful.

Relativistic Perspective

As with Baumeister (1991), Battista and Almond (1973) proposed an approach to meaning which is less grounded in a specific philosophy. Seeing the profound differences in the theories of meaning, Battista and Almond (1973) reviewed these

theories and developed a meta-theoretical approach. They proposed four basic characteristics of meaning in life which are found in all theories. Namely, when an individual states that their life is meaningful it implies: (1) they are *committed* to a concept of meaning; (2) they possess a *framework*, set of life goals, or purpose in life derived from this concept; (3) they see themselves as in the process of fulfilling or already having *fulfilled* their life goals/framework/purpose; (4) this fulfilment is experienced as a feeling of *significance.* Battista and Almond argue that meaning is different for each individual; that there are many pathways to meaning in life; and that what is essential for experiencing meaning is the individual's degree of commitment to their ideals and reasons for living. Thus, Battista and Almond shift the focus from explicating the nature of meaning to the process of a meaningful life.

Culture and Meaning

The theories of meaning reviewed above have been developed in European and North American context and reflect particular worldviews of these cultures. For example, Terror Management Theory (Pyszczynsi et al., 2004) and Yalom's (1980) theory of meaning in life are underpinned by the Western philosophy of existentialism. Such theories assume that fear of death and meaninglessness are ultimate human concerns yet it has been argued that such existential matters may be perceived differently in some Eastern cultures (Nelson, 2015). Theories of meaning arising from other cultural groups differ from the theories presented above. For example, in some Indian cultures, meaning comes from pursuing particular ends, namely dharma (virtue), artha (wealth), kāma (pleasure) and mokṣa (liberation; Salagame, 2015). Mokṣa is a spiritual concept which involves release from the cycle of birth and death. It is considered the ultimate goal of human existence and it is the realisation of this potential which provides ultimate meaning in life as well as helping individuals find situational meaning (Salagame,

2015). As Salagame notes, although it may resemble Frankl's (1959) notion of self-transcendence and Maslow's (1943) notion of self-actualisation, mokşa differs in that it involves a higher, spiritual transcendence.

Despite the presence of alternative perspectives, in the field of psychology the subject of meaning is dominated by Western theoretical perspectives. Meaning research and literature may appear culturally diverse as it has included many cultural groups such as Chinese (Shek, 2012), Cameroonian (Hofer et al., 2014), Japanese (Steger, Kawabata, Shimai, & Otake, 2008), and peoples from the Middle East, various African nations, Haiti, and Armenia (Toussaint et al., 2017). Furthermore, some culturally specific meaning measures have been developed (e.g. a Taiwanese Meaning in Life scale; Wang & Liao, 2015). However, the apparent cultural diversity in this research is largely superficial as the majority of meaning research with other cultural groups has involved applying Western theories, constructs, and measures rather than beginning from culturally unique understandings of meaning. As with the majority of meaning research, the current research is also based on a Western cultural context but with the acknowledgement that there are alternative understandings of meaning in life.

Summary

Psychological theories approach meaning and the nature of meaning in different ways. Frankl viewed the world as inherently meaningful, he considered meaning to be the primary motivator for human beings, and saw meaning as a process of discovery. Similarly, Maslow considered meaning to be a motivator but proposed that it exists within a person and only emerges as a primary motivator when other needs are satisfied. In contrast, Yalom and the TMT begin with the assumption of a meaningless world and propose that meaning is a creation of the human mind to buffer against existential

anxiety; it is essentially a defence mechanism. A different perspective is provided by Erikson who positioned meaningfulness as a product of the resolution of psychosocial crises. Finally, Baumeister takes a needs-based approach and proposes that meaning arises when needs are met. Although it is clear that these theoretical frameworks differ, sometimes at the most fundamental level, as to the nature of meaning, all do converge to agree on the centrality of meaning to psychological well-being.

Theoretical diversity can be both beneficial and encumbering. No theory of meaning in life has been found to be superior and the various theoretical perspectives have all advanced understandings of meaning and generated further research into the construct (Debats, 2000). However, theoretical diversity can be problematic in research and clinical contexts where a framework is needed to evaluate results and treatments (Debats, 2000). The relativistic approach represented by Battista and Almond (1973) enables researchers to bypass the question of the nature of meaning to focus on the individual's subjective sense of meaning and commitment to this meaning. This approach underpins the majority of psychological research into meaning in life which generally considers life to be meaningful when it is understood as such by the individual (Debats, 2000). This is the approach used in the current research as it is concerned with the individual's judgement of their life as meaningful. However, although this approach has been selected it is still recognised that there exists no comprehensive theoretical framework that explains the majority of findings from the empirical research on meaning (Wong, 2014).

2.2 The Construct of Meaning in Life

Generally, meaning in life (MIL) is considered a complex, multi-dimensional construct. Researchers, depending on their particular focus, have attended to different dimensions while excluding others. To add to the complexity, many different terms have been used

to describe meaning and its various components (Davis, Nolen-Hoeksema, & Larson, 1998). Furthermore, a range of instruments have been developed to measure meaning with a total of 59 meaning measures identified by Brandstätter, Baumann, Borasio, and Fegg (2012). This section will explore and clarify the various ways in which meaning has been addressed in research.

At the most fundamental level, MIL can be considered in terms of global and situational meaning. Reker and Wong (1988) provide a further useful framework for considering MIL research consisting of four dimensions of MIL: structure, source, breadth, and depth. A final important distinction in the manner in which meaning has been addressed concerns the search for MIL versus possession of MIL.

Situational and Global Meaning

At the most general level, the construct of meaning in life can be considered in terms of two interrelated components: global meaning and situational meaning (Park, 2010). Situational meaning refers to understanding the purpose and value of specific events and experiences such as meaning in work (Schnell, Höge, & Pollet, 2013) or meaning in trauma (Papathomas & Lavallee, 2012). It involves the *meaning of experience* and has been variously described as situational meaning, provisional meaning, meaning-of-the moment, and definitional meaning (Reker & Wong, 2012). Situational meaning consists of three components: appraisal of meaning or assessing the personal significance of an event; search for meaning or meaning making processes; and meaning as an outcome or the meaning a person finds in an event (Park, 2010). Various streams of research address these different components.

In contrast to specific meaning, global meaning refers to an individual's most fundamental and basic goals, beliefs, expectations, and assumptions regarding the

world. This aspect of meaning addresses the *experience of meaning* and poses questions such as: 'Who am I?', 'What is the purpose of life?', and 'Where do I belong?' (Reker & Wong, 2012). Global meaning has also been described using a number of other terms including existential meaning, purpose in life, ultimate meaning (Reker & Wong, 2012), personal theories of reality, and meaning structures (Park & Folkman, 1997). While situational and global meanings are considered distinct, they are closely interrelated. Situational meaning arises from the interaction between global goals and beliefs and the particular situation while the continuing search for and experience of meaning in day to day situations becomes a source for higher level global meaning (Reker & Wong, 2012). The current research examines global meaning, or participants' overall sense that their lives are meaningful, as opposed to examining the meaning experienced in regards to a specific situation.

Four Dimensions of Meaning

Reker and Wong (1988) provide a useful framework for considering the nature of MIL and how the construct has been approached by various researchers. They propose four dimensions of meaning which pertain to how the individual experiences meaning (structural components), where an individual derives their sense of meaning from (sources), the diversity of the meaning experienced (breadth), and the degree to which self-transcendence is involved (depth). The literature pertaining to these four dimensions will be reviewed below.

(1) Structure of Meaning

A number of models of the structural components of meaning have been proposed with one of the earliest being that of Battista and Almond (1973) who suggested a two component model of meaning. The first component is that of a framework which refers

to the individual's ability to see their life within some overall context and to derive a set of life-goals. The second component is fulfilment and encompasses the degree to which the individual considers themselves to be fulfilling these life goals. However, a major limitation with this conceptualisation is that it assumes that one framework is sufficient whereas Battista and Almond's own research suggested that individuals have more than one framework through which they see their lives. This approach is also highly goal-oriented and assumes that a framework will automatically stimulate goals and that individuals will attempt to achieve them.

Park and Folkman (1997) also considered meaning in terms of two structural components. The first component is that of order and encompasses assumptions and beliefs about order including beliefs about control, predictability, coherence, and justice. These beliefs can be grouped into beliefs about self, the world, and the relationship between self and the world. The second component is motivational and encompasses a sense of purpose and life goals with goals being defined as internal representations of the events or outcomes which one desires.

The model proposed by Reker and Wong (1988) is similar to Park and Folkman's (1997) but includes a third dimension to give a three part model consisting of cognitive, motivational, and affective components. The cognitive component involves beliefs, worldview, and schemas. This component involves building a belief system to make sense of one's life and experiences. The motivation component involves the values system which an individual constructs. This values system is informed by one's needs, beliefs, and wider society and acts as a guide for forming, prioritising, and pursuing goals. Goal pursuit and attainment in turn give rise to a sense of meaning and purpose in one's existence. The cognitive and motivational components correspond closely with Park and Folkman's dimensions of beliefs about order and motivation, respectively. The

affective component of Reker and Wong's model consists of the feelings of satisfaction and fulfilment that arise from the realisation of meaning. Reker and Wong (1988) summarised their model as follows: "personal meaning may be defined as the cognizance of order, coherence, and purpose in one's existence; the pursuit and attainment of worthwhile goals; and the accompanying sense of fulfilment" (p. 221). Thus, an individual with high MIL possesses a clear purpose and direction in their life; works towards goals which are consistent with their life purpose; feels satisfaction in regards to achievements in the past and strives towards making the future meaningful (Reker & Wong, 2012).

While Reker and Wong's conceptualisation has been widely utilised in MIL research, Martela and Steger (2016) have more recently suggested a slightly different structure of MIL consisting of the three components coherence, purpose, and significance. Coherence involves the experience of comprehensibility and making sense of one's life and experiences. Coherence exists when an individual distinguishes patterns which make the whole comprehensible. Belief systems, frameworks, schema, worldviews, mental models may provide a foundation for an individual to make sense of their life. The second component, purpose, consists of core valued goals and aims which provide direction to life and guide behaviour. While these two components map onto Reker and Wong's (1988) cognitive and motivational components, Martela and Steger argue an affective component as proposed by Reker and Wong is problematic. As Martela and Steger discuss, to date there are no affective states unique to MIL and the inclusion of an affective dimension, which incorporates feelings such as satisfaction and happiness, in the structure of MIL risks confounding MIL with other constructs such as life satisfaction. They suggest affective states may be antecedents or sources of meaning but they are not a part of MIL itself. Rather, they propose the third component of

significance which is evaluative rather than affective. Significance involves the evaluation of life as a whole in regards to its importance, value, and worthwhileness. They summarise by defining MIL as "the web of connections, interpretations, aspirations, and evaluations that (1) make our experiences comprehensible, (2) direct our efforts toward desired futures, and (3) provide a sense that our lives matter and are worthwhile" (Martela & Steger, 2016, p. 538). This structure of MIL concurs with that of King, Hicks, Krull, and Del Gaiso (2006) who also contend MIL consists of three components: "in general, then, we can broadly state that a life is meaningful when it is understood by the person living it to matter in some larger sense. Lives may be experienced as meaningful when they are felt to have significance beyond the trivial or momentary, to have purpose, or to have a coherence that transcends chaos." (p. 180).

Martela and Steger (2016) suggest the three components are interactive in nature and, as one, form the construct of MIL. Making sense of life (coherence) provides a foundation for perceiving life's worthiness (significance). Similarly, having a strong sense of purpose in life stimulates a sense that life is of worth (significance) and vice versa where finding new significance may generate motivation to work towards valued goals (purpose). Finally, cognitive coherence, some understanding of self and the world, forms the foundation for forming and selecting goals (purpose) while, in reverse, finding a purpose can provide structure to an individual's life (coherence).

Further components of MIL have been suggested. For example, Morgan and Farsides (2009) applied factor analysis to a range of MIL measures and produced five components of MIL: principled life, purposeful life, valued life, exciting life, and accomplished life. While the first three components are similar to Martela and Steger's (2016) coherence, purpose, and significance, Morgan and Farsides suggest an orientation whereby life is viewed enthusiastically and with excitement (exciting life)

and a sense of accomplishment, achievement and fulfilment (accomplished life) are also components of MIL. However, Martela and Steger argue, as with Reker and Wong's affective component, that an orientation of excitement and enthusiasm and sense of accomplishment are not components of the actual experience of MIL proper but antecedents which may enhance one's sense of MIL.

In discussing the structure of meaning, it is important to note the close alignment of MIL with the construct of purpose in life (PiL). The ambiguity about these two constructs warrants brief discussion and clarification of the approach taken to MIL and PiL in the current research. MIL and PiL have been conceptualised in three primary ways: (1) as synonymous, identical constructs with the terms purpose and meaning used interchangeably (e.g., Brandstätter et al., 2012; Frankl, 1959), (2) as two distinct, independent constructs (e.g., Damon, Menon, & Bronk, 2003; George & Park, 2013; Yalom, 1980), and (3) PiL has been treated as a sub-component of the overarching construct of MIL (e.g., Martela & Steger, 2016; Reker and Wong, 1988).

While in some lines of research the terms *purpose* and *meaning* have been used interchangeably, it is becoming evident that MIL and PiL are not synonymous and there is increasing awareness of the need for definitional clarity (Damon et al., 2003). George and Park (2013) contend that the construct of meaning, which they define as a sense that one's life and experiences make sense and are significant, is distinct from the construct of purpose, which they define as a sense of valued goals, aims, and direction as well as enthusiasm for the future. In a longitudinal study using separate measures of PiL and MIL which mapped onto these definitions, they found that PiL and MIL, though strongly correlated with one another, had different predictors and correlates. George and Park argue these findings provide evidence MIL and PiL should be treated as separate,

distinct constructs. This approach positions MIL as primarily a cognitive experience; a meaningful life is one that makes sense and is coherent to the individual.

In contrast, it has been argued MIL is not purely a cognitive experience but consists of multiple components (e.g. Martela & Steger, 2016; Reker & Wong, 1988). From this perspective, while PiL is considered to consist specifically of valued aims, goals, and life aspirations which give direction to life, a sense of PiL is treated as an aspect of MIL, not separate from it (Heintzelman & King, 2014). While PiL is motivational in nature, the remaining two components are cognitive (coherence) and evaluative (significance), that is, a meaningful life is one that the individual experiences as coherent, purposeful, and significant. Thus, consistent with Martela and Steger's (2016) three dimensional model of MIL, for the purposes of the current research, PiL will be regarded as one of the three components of the wider construct of MIL.

In summary, in defining the structure of MIL, a number of components have been proposed. Though different terminology is used, definitions appear to converge on the aspects of *coherence*, which is understanding one's existence and experiences, and *purpose*, which is direction and valued, future-oriented goals. In regards to other components of MIL, there is less consensus. The current research will use Martela and Steger's (2016) three dimensional model of MIL, which consists of coherence and purpose as described above, and the third dimension of significance (i.e. mattering). As argued by Martela and Steger, current MIL literature strongly supports this conceptualisation with many of theorists and researchers acknowledging that MIL comprises these three dimensions.

(2) Sources of Meaning

Sources of meaning refer to the activities, experiences, emotional states, and goals from which meaning is derived (O'Connor & Chamberlain, 1996). Sources of meaning are grouped into different categories and the total number of categories, category descriptions, and the methods used to ascertain sources differ between researchers and across different theories of meaning in life. As discussed in Section 2.1, Frankl (1959) proposed three very broad sources of meaning, creative, experiential, and attitudinal, while Yalom (1980) proposed five sources of meaning, altruism, creativity, dedication to a cause, hedonism, and self-actualisation.

The most frequent means of identifying sources of meaning has been through qualitative interviewing. After a series of studies asking adolescents, students, and other adult participants to share their sources of meaning in life, Ebersole (1998) defined eight categories: relationships, service, belief, obtaining, growth, health, life work, and pleasure. Wong (1998) asked participants to describe what constituted an ideally meaningful life and from participants' responses identified seven categories: achievement, relationships, religion, self-transcendence, self-acceptance, intimacy, and fair treatment. O'Connor and Chamberlain (1996) also used qualitative interviews to identify sources of meaning in life among middle aged participants. Responses were categorised into one of six categories which were developed by O'Connor and Chamberlain based on their analysis of previous research: relationships with people, creativity, personal development, relationship with nature, religious/spiritual, and social and political. Debats (1999) questioned young adult participants as to the most important things that gave meaning to their lives. After analysing responses he proposed the following major sources of meaning in life: relationships, lifework, personal wellbeing, self-actualisation, service, beliefs, and materiality.

Other researchers have combined qualitative and quantitative measures. For example, Bar-Tur, Savaya, and Prager (2001) factor analysed the Sources of Life Meaning, a scale developed through qualitative questioning, to derive 11 sources of meaning: communal activity, being with animals, autonomy/independence, self-development, family and communal values, interpersonal relationships, leisure activities, spousal relationship, attainment of tranquillity, and materialistic concerns. Similarly, through the use of in-depth qualitative interviews, Schnell (2009) derived a list of 26 major sources of meaning. This list comprises the most comprehensive list of source of meaning and encompasses almost all sources identified in previous research. These sources were factor analysed to produce four dimensions into which sources of meaning can be categorised. These categories of meaningful experience are:

(1) **Self-transcendence**, defined as experiences which involve commitment to objectives beyond one's immediate needs. It is further divided into:
(1a) Vertical self-transcendence: involving alignment to a higher, supernatural power. Sources of meaning in this category including religion and spirituality
(1b) Horizontal self-transcendence: involving the responsibilities taken for affairs that are outside of one's own individual, self-focused concerns. Sources of meaning in this category include social commitment, generativity, health, and unison with nature

(2) **Self-actualisation**, defined as experiences which involve fostering, challenging, and using one's capabilities. Sources of meaning in this category include, for example, personal achievements, creativity, knowledge, personal growth, and challenge.

(3) **Order**, which involves the retention of values and practicality. Examples of sources of meaning include traditions, morality, and reason.

(4) **Well-being and relatedness,** defined as experiences which involve the enjoyment of pleasures both in the company of others and in solitary. Examples of sources of meaning include community/interpersonal relationships, fun/leisure activities, comfort, and care.

Despite the diversity of sources, research suggests that some sources are more powerful predictors of MIL than others. Schnell (2011) found that, among 26 sources, the strongest predictor of MIL was horizontal self-transcendence and specifically generativity, that is, doing or creating things that are valued beyond one's death. Across a number of studies encompassing a range of ethnic and age groups, family relationships, falling in Schnell's (2009) category of well-being and relatedness, have also been identified as one of the most important sources of MIL (Debats, 1999; Delle Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2011; Glaw, Kable, Hazelton, & Inder, 2017; Grouden & Jose, 2014; O'Donnell et al., 2014). Similarly, Takkinen and Ruoppila (2001) found that human relations were the most important source of MIL among their older adult participants.

(3) Breadth of meaning

Reker and Wong's (1988) breadth of meaning dimension refers to the degree of diversity with which individuals experience meaning in their life. The number of sources of meaning is commonly used as a measure of breadth. Individuals tend to draw meaning from a number of domains, O'Connor and Chamberlain (1996) and Ebersole (1998) both found that people reported on average six sources of MIL and having a greater number of sources of meaning has been associated with a stronger overall sense of meaning (Schnell, 2011). Heine, Proulx, and Vohs (2006) found that when participants' sense of meaning was threatened in one domain, they reaffirmed and adhered more closely to alternative domains, a concept they introduced as 'fluid

compensation'. This finding suggests that having multiple sources of meaning is important as the individual can draw on alternative sources when one source is lost or threatened.

(4) Depth of meaning

The dimension of depth of meaning refers to levels of personal meaning, how superficial or deep the accounts of meaning are. The idea of levels of meaning is present in MIL theories. As discussed, Frankl (1959) proposed that *full* meaning can only be obtained by self-transcendence and Erikson's (1959) lifespan perspective suggests that older adults are in prime position to have developed a *fully* meaningful life. The notion of *full* meaning implicitly infers different levels of meaning and a dimension of depth.

Compared to the dimensions of structure and sources, relatively little empirical research has explored depth of meaning. In their study comparing the depth of meaning between younger and older adults, Ebersole and DePaola (1989) utilised external raters to judge the depth of meaning described by participants who responded to a question asking them to describe the strongest meaning in their life. Judgements were based on five markers to delineate the depth of meaning. Descriptions of meaning that were new and described in little detail were considered superficial while those that were described with greater specificity and complexity were considered deep. No differences were found in depth of meanings provided by older and younger participants.

A different approach to depth of meaning was proposed by Reker and Wong (1988) who suggested that there are four qualitatively different meaning orientations which differ in terms of the depth of meaning which the individual obtains. At the lowest level is *self-preoccupation*, which involves obtaining meaning from hedonistic pleasure and comfort. At the second level of *individualism* the person obtains meaning through

devotion of time and energy to realisation of their potential (e.g. creative and leisure activities, personal growth and achievement). The third level of *collectivism* involves movement beyond self-interest to service to others and commitment to societal and political causes. Finally, the fourth level of *self-transcendence* involves ultimate or cosmic meaning. Each level is thought to be qualitatively different in terms of the depth of meaning that is obtained and it was hypothesised that commitment to higher levels of meaning will result in a higher degree of MIL. Though little research has examined Reker and Wong's depth of meaning dimension, O'Connor and Chamberlain (1996) found that depth was an important aspect in the meaning accounts given by participants. Similarly, Reker and Woo (2011) found evidence for the four distinct meaning orientations in older adults. They also found that participants who derived meaning from self-transcendent sources had lower levels of depression and greater sense of purpose and control compared to individuals who derived meaning from self-preoccupation.

Search for and Presence of Meaning

A final approach to MIL has been to examine meaning in terms of 'search for' and 'presence of' meaning. Despite Frankl's (1959) emphasis on meaning as a primary motivator, MIL research has focused predominantly on the presence of meaning in the lives of individuals with less attention given to the process of searching for meaning. Research on search for meaning examines the intensity of individual's desire to experience meaning and how they develop a sense of MIL (Dezutter, Luyckx, & Wachholtz, 2015). Steger, Frazier, Oishi, and Kaler (2006) confirmed that search for and attainment of meaning are two separate constructs and developed four meaning profiles: meaning diffusion (low presence, low search); meaning moratorium (low presence, high search); meaning foreclosure (high presence, low search); and meaning

achievement (high presence, high search). A fifth profile has also been found where individuals are moderate on both dimensions (Dezutter et al., 2015).

2.3 Meaning in Life and Well-being in Older Adulthood

As discussed, despite the diversity among theories of meaning, all theories agree that perceiving life as meaningful is a critical aspect of well-being. This theoretical proposition has been supported by an extensive body of research (Steger, 2012). MIL has been related to lower levels of depressive symptoms (Bamonti, Lombardi, Duberstein, King, & Van Orden, 2016; Blackburn & Owens, 2015; Dezutter et al., 2015; Mascaro & Rosen, 2005), higher life satisfaction (Dezutter et al., 2015; Ho, Cheung, & Cheung, 2010), better psychological health and well-being (Battersby & Phillips, 2016), and higher quality of life (Bernard, Braunschweig, Fegg, & Borasio, 2015). It has also been found to be important in recovery from trauma (Elmir, 2014) and as a buffer against the impacts of stress and trauma (Woo & Brown, 2013).

Of particular importance to the current research, these relationships have also been found in older adult populations. MIL has been associated with better physical, emotional, functional and social domains of well-being among older adults (Haugan, 2014), higher subjective well-being, and lower levels of depression (Pinquart, 2002; Steger, Oishi, & Kashdan, 2009). Similarly, Zika and Chamberlain (1992) found that meaning in life was linked to higher levels of positive dimensions of mental health including life satisfaction, psychological well-being, and positive affect among older adults in Aotearoa New Zealand and concluded that MIL may be an important goal in psychotherapy for this population. Older adults with a strong sense of MIL have been found to have lower levels of mortality even when social support and religious attendance are controlled for (Krause, 2009b). MIL may also play a role in buffering the effects of stress among older adults (Krause, 2007) and in psychosocial adaptation in

the face of negative life events (Reker & Wong, 2012). Finally, research by Heisel and Flett (2016) suggests MIL protects against late-life suicidal ideation.

Several explanations for the link between MIL and psychological well-being have been proposed. Frankl (1959) theorised that some types of psychological distress are the consequence of the failure to find meaning in one's life, directly linking MIL with psychological health. It has also been demonstrated MIL functions as coping mechanism, moderating the relationship between stressful life circumstances and events which have the potential to damage psychological well-being (Krause, 2007; Vickberg, Bovbjerg, DuHamel, Currie, & Redd, 2000). As a coping mechanism, MIL provides a framework for viewing, interpreting, and making sense of stressful circumstances and events. Such a coping mechanism might be particularly important for older adults as more active coping mechanisms (i.e. changing events themselves) may be increasingly unrealistic in the face of age related declines and losses. Consequently, coping through more passive mechanisms such as changing the way events are viewed may be more effective. Thus, MIL may enable individuals to interpret and understand their life experiences, protecting against the deleterious effects of stressful life events on psychological health.

Similar potential pathways from MIL to psychological health can be identified by considering the purposeful and evaluative dimensions of MIL. McKnight and Kashdan (2009) propose individuals with a strong sense of MIL have a coherent life aim and are better equipped to select goals consistent with this aim as well as effectively manage processes and resources for goal attainment. That is, MIL increases the probability of setting and attaining goals consistent with one's values and the pursuit and achievement of highly valued goals is associated with positive psychological health (Sheldon &

Elliot, 1999). Finally, considering the evaluative dimension, MIL involves evaluating one's life as a whole as important and worthwhile. It is well established that self-worth and similar constructs involving valuing of oneself, such as self-esteem, are related to better psychological health while low self-esteem is consistently associated with poor psychological health (Leary & MacDonald, 1995).

In regards to physical health, both biological and behavioural pathways have been proposed to explain how MIL may impact on physical health. In relation to behavioural processes, perceiving one's life to be worthwhile may motivate individuals to pro-actively and consciously maintain their well-being including their physical health. As Steger, Fitch-Martin, Donnelly, and Rickard (2015) found, MIL was associated with positive and proactive orientations towards health and, in turn, better physical health. Although this research was carried out with college students, similar results have been found among older adults whereby MIL predicted health-related practices (exercise, health responsibility, and stress management) of men and women aged over 65 (Homan & Boyatzis, 2010). In contrast, individuals who have low meaning in their lives may be less motivated to remain physically healthy or may be more likely to engage in behaviours that are detrimental to their health (Park, 2007). Thus, MIL might enhance positive health attitudes and health-enhancing behaviours while reducing health risk behaviours (Steger et al., 2015).

In relation to biological processes, Ryff and Singer (1998) suggest MIL fosters a more robust immune and endocrine system which protects against physical illness and the physical effects of stress. Although less widely researched than behavioural pathways,

there is some empirical support for such positive effects of MIL on physiology (Lutgendorf, Vitaliano, Tripp-Reimer, Harvey, & Lubaroff, 1999).

Given the positive outcomes associated with MIL, identifying sources of MIL for older adults and understanding how MIL arises in this population are important tasks for researchers. The relative importance of various sources of meaning has been found to differ across the lifespan. In research carried out with Jewish and Arab Israelites, Bar-Tur et al. (2001) found differences between older and younger participants in terms of the importance of various sources for providing a sense of meaning. Family and community, autonomy/independence, interpersonal relationships, and attainment of tranquillity were perceived as more important sources of meaning by older participants whereas materialistic concerns, self-development, and leisure activities were perceived as more important by younger participants. Similarly, Prager (1996) in his study with an Australian sample, found that being acknowledged for achievement, hedonistic activities, and personal growth were significantly more important for younger compared to older adults while preserving human values and financial security were significantly more important for older adults. In an Aotearoa New Zealand context, Grouden and Jose (2014) found that younger participants were more likely to find personal growth meaningful whereas community activity and standard of living were more important sources of meaning for older adults. These findings suggest that, for older adults, meaning tends to be derived from collective, humanitarian, self-transcendent sources whereas younger adults tend to derive meaning from more materialistic, personal sources. As this research is cross-sectional it cannot be determined whether age differences are due to changes over a lifetime or to cohort effects. However, the findings demonstrate that the relative importance of sources of meaning differ across age groups.

Despite evidence for differences in meaning among age groups, very little research has investigated sources of MIL among older adults specifically. Although social relations and religion have been identified as important sources of MIL in older adulthood (Krause, 2012), changes in population and older adult participation suggest that there is a need to examine other aspects of the lives of older adults and how they may contribute to or erode their sense of MIL.

2.4 Chapter Summary

A number of psychological theories address meaning and the nature of meaning. A relativistic perspective proposed by Battista and Almond (1973) allows researchers to bypass controversies regarding the nature of meaning to focus on the individual's subjective sense of meaning and its consequences. The construct of MIL is multi-dimensional with the most basic distinction being global versus situational meaning. The current research focuses on global meaning which has been studied in terms of four dimensions: structure, sources, breadth, and depth. The relationship between MIL and well-being among the population in general and older adults specifically has been well-established. The growing evidence for the relationship between MIL and well-being relationship provides increasing support for the development of a better understand how MIL may be enhanced or eroded among older adults.

Chapter 3: Activity Involvement in Older Adulthood

Demographic realities are prompting a change in how older adulthood is perceived and opportunities available to older adults. Ideologies of ageing reflect the sense of ever widening possibilities for older adults and older adulthood. For example, the ideology of 'productive ageing' advances the view that the capabilities of older adults should be better utilised in economically beneficial activities (Moody, 2001). A similar sense of increased possibilities is present in psychological theories of ageing such as Activity Theory which is built on the premise that engagement in activity is essential to the well-being of older adults (Lemon, Bengtson, & Peterson, 1972). It is increasingly recognised that old age is not necessarily a time of disconnecting from society, but of continued participation. Although older adults engage in a range of activities, due to a several societal and individual factors three particular activities are becoming increasingly common among older adults: employment, volunteering, and informal caregiving. This chapter will provide justification for examining whether participation in these activities is associated with MIL among older adults by: (1) outlining changes in older adults' patterns of participation in employment, volunteering, and informal caregiving; (2) briefly reviewing the functions of these activities; and (3) drawing on theoretical models of meaning in life and existing literature to present an argument for the potential meaning-making function of these activities.

3.1 Employment

As the population ages, the number of adults in the Aotearoa New Zealand work force aged 65+ is predicted to continue to grow (Statistics New Zealand, 2017b). In 2006, 3% of the workforce was aged 65+, by 2017 this had increased to 6%, and it is expected that by 2036 this proportion will have risen to 9-15% and as high as 18% by 2061 (Statistics New Zealand, 2017b). Not only is the proportion of the total workforce over 65

increasing but the proportion of older adults in full-time or part-time employment is increasing. In June 2017, 23.5% of adults over 65 were in full-time or part-time employment (Statistics New Zealand, 2017a), up from 11.4% in 2001 (Statistics New Zealand, 2013c). As can be seen in Table 1, this trend is occurring across the member nations of the Organisation for Economic Cooperation and Development[4] (OECD). This change is driven by both individual and societal factors. Individual factors include job satisfaction, financial needs, and life satisfaction including mental stimulation and the desire to make a difference. Societal factors include increased availability of part-time work and flexible work arrangements and improved health among older adults (New Zealand Work Research Institute, 2015b). Important changes in the New Zealand Superannuation Scheme have also encouraged older adults to remain in employment. These changes include the elimination of the taxation surcharge on additional incomes of superannuitants in 1998; the gradual raising of the age of New Zealand Superannuation entitlement from 60 to 65 between the years 1991 to 2001 (Ministry of Social Development, 2003); and the abolition of mandatory retirement under the Human Rights Act (1993). Many older adults will move into part-time or 'bridge' employment before retiring fully.

[4] Established in 1961, the OECD is a forum of 34 industrialised countries with the aim of building strong economies, promoting policies to improve the social and economic well-being of individuals around the world (OECD, 2017b).

Table 1

Labour Force Participation Rates for Adults Aged 65+ Across Selected OECD Member Countries

	2004	**2010**	**2016**
Korea	29.8	29.4	31.5
New Zealand	11.3	17.1	23.4
United States	14.4	17.4	19.3
Canada	7.7	11.3	13.7
Australia	6.5	10.8	12.6
United Kingdom	6.1	8.6	10.7
Denmark	5.5	5.7	8.4
Germany	2.8	4.0	6.6
OECD Average	11.0	12.5	14.5

Note. Data retrieved from OECD (2017a).

Research on the outcomes associated with older adult employment is mixed. Continuation in employment for older adults who have reached retirement age has been associated with positive mental well-being (Schwingel, Niti, Tang, & Ng, 2009), higher subjective well-being (Kim, Lee, Sangalang, & Harris, 2015), lower levels of depression (Hao, 2008), and better physical health and lower mortality rates compared to non-workers (Luoh & Herzog, 2002). In contrast, McIntosh and Danigelis (1995) found no evidence that employment impacted on positive or negative affect among older adults. Furthermore, when employment is perceived as stressful it can contribute to both physical and psychological illness (Herr et al., 2015; Kivimäki et al., 2012). Similarly, Mezuk, Bohnert, Ratliff, and Zivin (2011) found that high job strain, defined as low job satisfaction combined with high job stress, was associated with increased

depressive symptoms among older adults. These findings suggest that, while employment has many potential benefits, when conditions are not ideal and employment is not experienced as positive, satisfying, or desired, the outcomes for the individual may be negative.

Employment serves a number of functions and can satisfy a range differing needs beyond basic needs such as food and shelter. Employment can provide comfort; a sense of satisfaction, control, and self-worth; the widening of options for how individuals live their lives (Ministry of Social Development, 2016b); the provision of a valued social role and identity; social interaction and connections; status; autonomy; an opportunity for creative expression and skills development; and a sense that one matters in wider society (Hulin, 2014).

Research investigating *meaning in work* suggests that employment also serves a meaning-making function. Meaning in work refers to the subjective experience that one's work enables growth, is of significance, and contributes in some manner to a greater good (Steger, Dik, & Duffy, 2012). It is a situational meaning which potentially translates to a global sense of MIL (Allan, Duffy, & Douglass, 2015). Experiencing work as meaningful is associated with a range of positive outcomes for the individual and organisation including organisational commitment, enhanced job performance, occupational and organisational identification, customer satisfaction, work motivation, engagement, empowerment, decreased stress and absenteeism, and personal fulfilment (Michaelson, Pratt, Grant, & Dunn, 2014; Rosso, Dekas, & Wrzesniewski, 2010). Given these outcomes, substantial attention has been given to examining cultivation of meaningfulness in the work place (Dik, Byrne, & Steger, 2013) and factors that contribute to meaningful work. These include both job and organisational characteristics

as well as individual psychological factors such as, for example, job design, interpersonal relationships at work, and individual attitudes (Rosso et al., 2010).

While the majority of research has focused only on meaning in work rather than MIL, Allan et al. (2015) examined relationships between MIL, meaning in work, and age. In this study, meaning in work was found to moderate the relationship between age and MIL. For participants low in work meaning, MIL was lower for those aged 20-50 years but higher for those over 50. The relationship was opposite for those high in work meaning, with MIL being higher in participants aged 20-50 but declining in those aged over 50. However, participants in their 60s displayed relatively similar levels of MIL regardless of their level of meaning in work. Considering the interconnection of situational and global meaning (i.e. MIL), these findings and the large body of research on meaning in work suggest that employment can impact an individual's MIL. However, to date there does not appear to be any research comparing MIL among older adults in paid employment and those not in paid employment. Furthermore, the age range of Allan et al.'s (2015) participants was 18 to 67, thus the older adult population was largely excluded.

Further support for the potential meaning-making function of employment can be found by returning to Martela and Steger's (2016) definition of MIL. As discussed, Martela and Steger define MIL as "the web of connections, interpretations, aspirations, and evaluations that (1) make our experiences comprehensible, (2) direct our efforts toward desired futures, and (3) provide a sense that our lives matter and are worthwhile" (p. 538). More concisely, MIL involves individual's coherent understanding of their lives and experiences (coherence), direction for actions (purpose), and feeling their lives are worthwhile and matter (significance). Employment may provide for several of these criteria as it affords order and structure (coherence) and an avenue for formulating and

pursing goals and living one's values (to contribute to a sense of purpose). The contribution one makes through their work may also foster a sense that one's life is worthwhile (significance).

A consideration of Schnell's (2009) categories of meaningful experience also provides an argument for the potential of employment to enhance MIL. Employment potentially comprises many opportunities for self-actualisation through providing an avenue for creativity, development and personal growth, and achievement. A similar argument may be made for self-transcendence whereby the employment role provides an avenue for attending to needs of others and contributing to a cause beyond oneself. In regards to Schnell's category of well-being and relatedness, employment provides the opportunity to garner social support and experience a sense of belonging, both of which are associated with enhanced MIL (Krause, 2007; O'Donnell et al., 2014; Rosso et al., 2010). Employment also provides individuals with a social role which in turn provides a system of values and norms to direct behaviour (Thoits, 1983). Of further importance, the approval of wider society given to the behaviours associated with a particular role, provides reassurance that the behaviour is in some sense good and right (McCall & Simmons, 1966). As, Baumeister (1991) contends, it is this perception of ones actions as good, right, and justifiable which is essential for an individual to feel that their actions are worthwhile, a critical aspect of MIL. Finally, individual or collective accomplishment in the workplace and work role may foster self-esteem (Rosso et al., 2010). As an assessment of self-worth, self-esteem is intimately linked to the evaluative (significance) component of MIL. That is, employment may foster favourable self-perceptions and so enhance MIL. Thus, existing theories support the proposition that employment has the potential to maintain or enhance MIL.

However, employment is not always highly valued or desired by the individual. When this is the case, it is possible that employment may undermine one's sense of MIL by, for example, inhibiting the pursuit of valued goals in other life domains. In support of this possibility, research has found greater goal violations to lead to declines in meaning over time (George & Park, 2017). Similarly, retirement or unemployment may also erode MIL, especially for individuals who previously derived high levels of MIL from their employment as these individuals no longer have the same opportunities to find meaning. Unemployment or retirement experienced as unsatisfactory may also be expected to negatively impact self-esteem and in turn self-worth and MIL. Pereti and Wilson (1975) found that involuntarily retired individuals were more likely to report feelings of uselessness. Furthermore, as discussed, MIL comprises the cognizance of coherence and research suggests exposure to incoherence, and specifically the violation of expectations, is related to lower MIL (Heintzelman, Trent, & King, 2013). Unemployment as well as employment or retirement which is undesired or experienced unsatisfactory, may be considered violations of an individual's expectations regarding work and so could erode a sense of coherence and, in turn, MIL. Thus, employment has the potential to enhance MIL but when it is not valued or desired it is conceivable that employment could erode an individual's sense of MIL.

3.2 Volunteering

Volunteering is a second activity in which a large proportion of older adults engage. The effort to produce a universal definition of 'volunteer work' has faced a number of challenges such as societal or cultural differences in understandings and expectations about helping behaviour and where volunteer work lies in terms of payment, non-payment, covering of expenses, and other forms of remuneration (International Labour Organization, 2011). After consideration of the various existing definitions, the

International Labour Organization (2011) defined volunteering as "unpaid non-compulsory work; that is, time individuals give without pay to activities performed either through an organisation or directly for others outside their own household" (p. 13). The New Zealand General Social Survey, carried out in 2012, found that 37.7% of adults aged between 65 and74 participated in voluntary work[5], a higher proportion than any other age group. Participation rates dropped slightly but remained high in the older age group with 31.2% of adults aged 75+ engaging in voluntary work (Statistics New Zealand, 2013b).

The benefits of volunteering for older adults have been well documented. Individual benefits include enhanced quality of life, increased social support, lower levels of depression, lower mortality rates, higher functional independence, and better cognitive functioning compared to non-volunteers (Anderson et al., 2014; Morrow-Howell, Hinterlong, Rozario, & Tang, 2003). Wider society also benefits with conservative estimates placing the value of volunteering to the global economy at $400 billion (International Labour Organization, 2011). However, volunteering is not always beneficial. Windsor, Anstey, and Rodgers (2008) found an inverted U-shaped relationship between volunteering and well-being with both very high and very low frequencies of volunteering being associated with lower levels of psychological well-being. Their research suggests that participating in between 100 and 800 hours of volunteer work per year is optimal for promoting well-being.

Motivations for engaging in volunteering are diverse. Individuals may volunteer in order to make social contacts, make a contribution to society, as a lead-in to

[5] Voluntary work in the New Zealand General Social Survey was defined as voluntary activities undertaken for a group or an organisation and was distinguished from unpaid work defined as help provided to people outside of one's household without payment but not including those activities carried out for, or through, groups and organisations (Statistics New Zealand, 2013b).

employment, to develop skills, to broaden experiences, as a means of fulfilling cultural, familial, or religious obligations (Ministry of Social Development, 2016b), to engage with others and avoid isolation (Smith, 2012), or to help others and remain active (Okun & Schultz, 2003). Van Willigen (2000) further notes that role theories propose volunteering in older adulthood provides individuals with valued roles and compensates for role losses in other life areas. For some Māori, cultural obligations play an important role with volunteer work being undertaken because it is considered tikanga[6] (Office for the Community and Voluntary Sector, 2007). Previous research suggests older adults tend to engage in volunteering for generative, other-focused reasons (e.g. helping others, contributing to a cause they believe in) compared to younger adults who are more likely to volunteer for individualistic reasons (e.g. gain experience in a workplace; Chappell & Prince, 1997; Konrath, Fuhrel-Forbis, & Lou, 2012).

As with employment, the enhancement of meaningfulness is one of the less researched functions of volunteering, yet both empirical research and consideration of theoretical models lend support to this potential meaning-making function. In a sample of German adults ranging in age from 18 to 65, Schnell and Hoof (2012) found that volunteers, compared to the population in general, experienced significantly more meaningfulness in their lives. Thoits (2012) found that meaningfulness mediated the relationship between role-identity and well-being with respect to the volunteer role. The more important the volunteer role was to individuals, the greater their sense of meaningfulness, which in turn enhanced mental and physical health. Engagement in volunteering has also been successfully used as an intervention to enhance meaningfulness among individuals with post-traumatic stress disorder (Southwick,

[6] Tikanga can be defined as convention, protocol, habit, correct procedure, custom, or a system of practices and values (Moorfield, 2003).

Gilmartin, McDonough, & Morrissey, 2006). Despite the support these findings lend to the proposition that volunteering is associated with enhanced MIL, older adults remain largely under-represented in this body of research. The exception to this is research carried out by Sherman, Michel, Rybak, Randall, and Davidson (2011) demonstrating an association between volunteering and MIL in a sample of older adults. However, the sample for this research was relatively small, unrepresentative, and was not randomly selected.

Turning again to Martela and Steger's (2016) model of meaning, volunteering may be expected to enhance MIL as it provides opportunities for several of the criteria for MIL to be met. A volunteering position can provide order and structure; the opportunity to build social relations and garner social support; an avenue for pursing valued goals; and a social role to provide both a system of values and norms to guide behaviour and the mechanisms to affirm and justify this behaviour. Furthermore, a consideration of the earlier discussion on sources of MIL would suggest that volunteering is likely to enhance MIL specifically among older adults. Volunteering is an allocentric activity and generally involves self-transcendence and, as noted, experiences involving self-transcendence have been found to be important sources of meaning for older adults. Thus, both empirical research and theoretical models of meaning suggest that volunteering will be associated with enhanced MIL.

3.3 Informal Caregiving

Informal caregiving is a third activity in which an increasing number of older adults are engaged. Informal care, typically an unpaid role, can be defined as the "help or support provided by a family member, friend or neighbour to a disabled, sick, or frail person" (Statistics New Zealand, 2009, p. 1). As disability and chronic illness increase with age, population ageing brings an increased demand for informal caregivers. Furthermore,

there has been an increase in the number of grandparents assuming full responsibility for their grandchildren (Worrall, 2009). In 2013, the largest proportion of informal caregivers were aged between 50 and 54. The number of caregivers has increased in Aotearoa New Zealand in line with the ageing population, but the proportion of caregivers in older age groups (55+) has increased at a faster rate than in the general population (Department of Labour, 2011). Care is most often provided by females who outnumber males in all carer age and ethnic groups (Grimmond, 2014).

Informal caregiving is highly economically beneficial to wider society. Care provided by informal caregivers can delay or prevent residential care placements and hospitalisations (Mittelman, Haley, Clay, & Roth, 2006) and reduce health care expenditure (Grimmond, 2014). The overall economic value of the unpaid contributions of informal caregivers in Aotearoa New Zealand is estimated to be around $NZ 10.8 billion (Grimmond, 2014).

Caregiving Burdens and Benefits

In contrast to volunteering, informal caregiving is most commonly associated with deleterious outcomes for the caregivers. For example, caregivers are often found to have poorer physical and psychological health outcomes compared to non-caregivers including higher levels of depression and anxiety and lower life satisfaction (Cooper, Balamurali, & Livingston, 2007; Darragh et al., 2015; Hirst, 2005; M. Pinquart & Sörensen, 2003). The caregiving role often conflicts with other roles and responsibilities and carers report feeling frequently stressed and unsupported in their role, having inadequate respite, and having little time to themselves (Jorgensen, Parsons, Jacobs, & Arksey, 2010). Additional negative implications are of a financial nature. Caregivers may be faced with increased expenses related to the caregiving (for example, medical

costs, home modifications) coupled with lowered income due to having to reduce or leave paid employment in order to provide care.

Caregiver burden is a concept widely used to encompass the negative impacts of caregiving. Though there is no single definition, George and Gwyther (1986) describe caregiver burden broadly as the negative impact associated with providing care which may relate to physical, emotional, social, psychological, and financial domains. A further distinction is that of objective and subjective burden. The former encompasses factors involved in the physical provision of care, such as the tasks performed and the number of hours of caregiving, while the latter refers to the psychological and emotional consequences, such as such as depression and stress, resulting from the objective burden (Bastawrous, 2013). Higher levels of burden are generally associated with worse physical and psychological outcomes for the caregiver (Anum & Dasti, 2016; Lu, Liu, & Lou, 2015).

Despite the well-documented negative outcomes, a growing body of research demonstrates caregiving can also be a positive experience in many respects. Early qualitative studies were among the first to bring attention to the positive implications of caregiving. For example, caregivers identified satisfaction, increased self-knowledge, and improved relationships as benefits stemming from the caregiving role (Archbold, 1983). Quantitative research by Kinney and Stephens (1989) described ‘uplifts’, or small satisfactions, experienced in the care of individuals with dementia, including friends and family showing understanding and the care recipient showing affection. Cohen, Gold, Shulman, and Zucchero (1994) likewise identified ‘enjoyable aspects’ of caregiving including: a sense of mastery for the caregiver, satisfaction and fulfilment, and gratification from observation of desirable outcomes such the recipient of care being able to stay at home. Companionship, sense of fulfilment and reward, meeting

obligations, and enjoyment are further positive dimensions of the caregiving experience and caregivers who report more of these positive aspects are less likely to report depression, burden, and poor health (Cohen, Colantonio, & Vernich, 2002). A range of terms have been used to describe these benefits including uplifts (Kinney & Stephens, 1989), gains (Kramer, 1997), benefits (Lum, Lo, Hooker, & Bekelman, 2014), and caregiver satisfactions (del-Pino-Casado, Palomino-Moral, & Frías-Osuna, 2015).

While the measurement of burden and stress has assisted in the development of interventions to relieve these factors, a consequence has been one-sided interventions which miss the opportunity to enhance areas of satisfaction. Similarly, focusing only on the positive experiences of caregiving has the potential to trivialise or negate the stress which, Nolan, Grant, and Keady (1996) argue, is an inevitable component of caregiving. Kramer (1997) suggests that the caregiving experience is highly complex and needs to be reconceptualised. Rather than viewing the caregiving experience as unidimensional, sitting somewhere on a positive-negative continuum, a more holistic and multidimensional approach is needed which considers the positive and negative, the stress and satisfaction, as co-existing and experienced simultaneously. Empirical research has supported the co-existence of positive and negative aspects, suggesting they are distinct concepts and not opposite ends of a continuum (del-Pino-Casado et al., 2015; Folkman, 1997).

Caregiving and Meaning

The majority of research on meaning and caregiving has focused on *meaning in caregiving* rather than caregiving's global MIL. Meaning in caregiving is often studied as a mediator between stressors and outcomes with 'finding meaning' conceptualised as a coping mechanism for dealing with stress (Folkman, 1997; Quinn, Clare, McGuinness, & Woods, 2012). A systematic review indicated that finding meaning in

caregiving positively impacts on the well-being of caregivers (Quinn, Clare, & Woods, 2010). Given this positive association, some researchers have begun to examine how aspects of the caregiving experience relate to caregivers' finding meaning in caregiving. Noonan and Tennstedt (1997) found that, while finding meaning in caregiving was positively associated with well-being it was not related to any of the objective caregiving stressors, namely, the frequency of care, the extent of care, or the care recipient's degree of impairment and problem behaviours. Similarly, in a study with caregivers of individuals with dementia, Quinn, Clare, and Woods (2012) found that meaning in caregiving was predicted not by the objective indicators of caregiver health, hours providing care, gender, or relationship to the care recipient but by high perceived competence, high religiosity, low role captivity, and high intrinsic motivations. Thus, research suggests that objective situational variables are poor predictors of meaning in caregiving while subjective aspects of caregiving are more reliable predictors.

While the findings presented thus far relate to situational meaning rather than MIL, the interconnection of situational and global meaning, as proposed by Reker and Wong (2012), would suggest that experiencing meaning in caregiving would also contribute to an individual's sense of MIL. Thus, it would be expected that high MIL among caregivers would also contribute to positive well-being and that subjective aspects rather than objective aspects of caregiving would be most important for predicting MIL among caregivers. However, there does not appear to be any research examining aspects of caregiving and how they may relate to MIL. Furthermore, the greater part of the existing caregiving research examines care *for* older adults and the caregivers of older adults while relatively little is known about caregivers who are themselves older adults (Abramson, 2015).

While the majority of research has focused on situational meaning in caregiving, a few studies have also examined caregiving and its relationship to MIL, although the findings are inconsistent. Farran, Miller, Kaufman, and Davis (1997) found that situational meaning among caregivers of individuals with dementia was associated with lower levels of depression but MIL was not related to any of the well-being outcomes measured. In contrast, among a sample of caregivers for individuals with Parkinson's Disease, Konstam et al. (2003) found that MIL was associated with well-being while situational meaning did not explain any additional variance in well-being. The different populations (dementia caregivers compared to Parkinson's disease caregivers) and different measures of well-being may account, in part, for the differences.

Not only are the findings of these studies inconsistent but MIL is conceptualised in a somewhat narrow manner. In both studies, global meaning was measured using the Ultimate Meaning subscale of the Finding Meaning Through Caregiving Scale (FMTC; Farran, Miller, Kaufman, Donner, & Fogg, 1999). The items of this subscale focus only on the individual's identification with religious or spiritual belief systems, for example, "The Lord won't give you more than you can handle". Not only is the subscale biased towards a Judeo-Christian spirituality but it also a very unidimensional approach to MIL which does not incorporate the multiple components, beyond belief systems, that comprise MIL as it is defined in the most recent conceptualisations and in the current study. Thus, although MIL has been addressed in previous caregiver research, the findings have been varied and the conceptualisation of MIL is not consistent with current understandings of the construct of MIL.

In summary, the discussion above identifies a number of gaps in the caregiving and MIL literature. Firstly, there does not appear to be any research focused specifically on older adult caregivers. Secondly, it is not clear whether caregiving contributes to MIL

or, more specifically, compared to non-caregivers, do caregivers experience more, less, or similar levels of MIL among older adults? Third, meaning in caregiving has been associated with well-being among caregivers while, in contrast, little research has examined the relationship between global MIL and well-being. In those studies which have examined this relationship, MIL has been conceptualised in a manner which is inconsistent with current understandings of the construct. Finally, the question remains that if MIL does enhance well-being, are there aspects of the caregiving experience which determine why some caregivers experience higher MIL than others?

Predictors of MIL among Informal Caregivers

Informal caregiving may enhance MIL among older adults. As with volunteering and employment, a caregiving role can provide order and structure in the individual's life as well as a social role to provide both a system of values and norms to guide behaviour and the mechanisms to affirm and justify this behaviour. Furthermore, even more than volunteering, informal caregiving may be considered an activity involving self-transcendence. As noted, experiences involving self-transcendence have been found to be important sources of meaning for older adults.

However, informal caregiving may also erode MIL through inhibiting the pursuit of valued goals. Informal caregiving is a role that, unlike volunteering, is less likely to have been specifically chosen but may be undertaken due to a sense of obligation or because there is no-one else to fill the role (Abramson, 2015; Egdell, 2013; Walker, Pratt, & Shin, 1990) and, as discussed, often involves conflict with, and compromise of, other roles. As already noted, goal violation has been found to lead to declines in meaning over time (George & Park, 2017). Similarly, as Quinn, Clare, and Woods (2012) found, caregivers' experience of role captivity (feeling trapped in a role) was associated with lower levels of meaning in caregiving. Consequently, it is conceivable

informal caregiving may erode MIL by requiring the caregiver to abandon pursuit of particular valued goals and by inhibiting involvement in other activities and roles which afford meaning.

Another potential path by which caregiving may erode MIL relates to coherence. As noted, coherence is a critical component of MIL. An individual's sense of coherence may be challenged by major life events, such as becoming an informal caregiver, which are often perceived as inconsistent with core beliefs and assumptions (Janoff-Bulman, 1992). That this inconsistency is actually experienced is evidenced in accounts given by some caregivers who have described their situation using terms such as 'not fair' (e.g. Shim, Barroso, & Davis, 2012). That is, informal caregiving might erode MIL by challenging an individual's core beliefs and sense of coherence. Thus, as it may be argued that caregiving will enhance MIL among older adult informal caregivers, it may also be argued that informal caregivers will be expected to experience less MIL than non-caregivers.

Time may play an important role in this relationship. King and Hicks (2009) suggest that the decline in meaning that may follow negative life experiences can stimulate a search for meaning and, over time, discovery of meaning. Additionally, it is conceivable that time allows the caregiver a chance to understand and make sense of the caregiving experience so enhancing coherence and overall MIL. Evidence for this was found by Krause (2007) in his research on social interactions and MIL. For the older adult participants of this research, the experience of negative interactions was initially associated with a decline in MIL but over time negative interactions came to be associated with an enhanced sense of MIL. Krause suggests the reason for this may be that it takes time to make sense of negative experiences and see them within a broader

context. So, although caregiving may be associated with an initial decline in MIL, this decline may not be maintained over time.

Further potentially important predictors of MIL among older adult caregivers are individual responses to the caregiving experience. As discussed above, subjective appraisals of the caregiving role and experience have been found to be stronger predictors of meaning than any objective aspects of caregiving (Noonan & Tennstedt, 1997; Quinn, Clare, & Woods, 2012). In particular, finding positive aspects in caregiving has been associated with enhanced well-being (Walker, Powers, & Bisconti, 2016). Similarly, although not specific to caregivers, life events perceived as positive have been found to be strongly related to MIL (King & Hicks, 2009). These findings suggest that the ability to positively appraise the caregiving situation and role will be associated with greater MIL.

Such a relationship may be explained by the link between experience and affect and with reference to Fredrickson's (2004) Broaden and Build theory. As discussed by Anderson, Kay, and Fitzsimons (2013), negative and positive appraisals are largely synonymous with negative and positive affect. According to the Broaden and Build Theory, the experience of positive emotions results in a broadening of an individual's thought-action repertoire. For example, the positive emotion of joy promotes the desire to play while interest promotes exploration. A mind-set that has been broadened in such a manner promotes creativity, discovery, and the building of social bonds. On the other hand, negative emotion, which has been associated with lower presence of meaning (Isik & Üzbe, 2015), narrows one's mind-set and promotes immediate and survival-oriented behaviours, for example, anxiety results in fight or flight responding. Thus, positive appraisals, and by association, positive affect, might foster MIL by permitting a

more global focus whereby the individual is more likely to see how their lives and experiences fit into, and make sense in, a larger system.

3.4 Chapter Summary

The proportion of older adults engaging in paid employment, volunteer roles, or providing informal care is projected to continue to grow. As these activities are increasingly likely to become a part of the lives of older adults, it is important to consider whether engagement in these activities has the potential to enhance or erode older adults' sense of MIL. Theoretical models of meaning and empirical research suggest that employment and volunteering may serve a meaning-making function, yet older adults are largely excluded from this research.

In regards to informal caregiving, research and theory suggest that informal caregiving has the potential to enhance MIL but, equally, that caregiving may erode a sense of MIL. However, older adult caregivers are also largely excluded from this research with the focus being primarily on the care given *to* older adults not *by* older adults. Furthermore, while different aspects of caregiving have been found to differentially relate to meaning in caregiving, there does not appear to be any research investigating how different aspects of caregiving relate to MIL.

In sum, little is known about whether employment, volunteering, and informal caregiving contribute a global sense of meaning in life among older adults. These activities may relate to MIL in both a direct and indirect manner through mechanisms such as social roles and, as there is increasing evidence for, social relationships (Krause, 2007).

Chapter 4: Social Support

Interpersonal relationships and the nature, dynamics, and implications of such relationships have received extensive empirical attention from a range of disciplines (Chen, 2013a). Behaviour, adjustment, and physical and psychological health maintenance and recovery have all been shown to be strongly influenced by an individual's relationships with others (Konrath & Brown, 2013; Lam & Dickerson, 2013). Of importance to the current research, there is increasing recognition of an association between interpersonal relationships and MIL (Dobríková, Pčolková, AlTurabi, & West, 2015; Krause, 2007; Lambert et al., 2013; Shao, Zhang, Lin, Shen, & Li, 2014; Stavrova & Luhmann, 2016). In the psychological study of interpersonal relationships, there are a number of distinct yet interrelated constructs including social networks, social integration, social cohesion, social capital, and social support. Of these, the construct of social support has received the greatest attention, particularly in relation to health and well-being (Song, Son, & Lin, 2014). This chapter will review and critique definitions and dimensions of social support and the research pertaining to the relationship between social support and MIL among older adults. The review will build a justification for examination of the relationship between MIL and the provision of social support using the Social Provisions framework (Weiss, 1974). Finally, the possibility of provision of social support as a mediator between MIL and employment, volunteering, and informal caregiving will be discussed.

4.1 Social Support: Definition and Overview

Research by Cobb (1976) and Cassel (1976) is typically considered the origin of current theorisation about social support (Song et al., 2014). In their publications, Cobb and Cassel both argued that individuals who had stronger social ties were more likely to be protected against deleterious outcomes associated with stressful events than those who

did not have such ties. Since Cobb and Cassel's publications, the concept and implications of social support have received extensive attention from a range of disciplines including sociology, psychology, psychiatry, and epidemiology (Song et al., 2014).

Despite the popularity of the concept, there remains a lack of consensus regarding how social support should be conceptualised and operationalised. Some researchers take a functionalist approach, incorporating the functions or outcomes into their definitions of social support. For example, Cobb (1976) defined social support as information and specifically information which leads an individual to believe that they are esteemed, belong, and are loved and cared for. Another functionalist definition is provided by Pearlin (1985): "the access to and use of individuals, groups, or organizations in dealing with life's vicissitudes" (p. 340). Others have defined social support specifically in terms of stress or health, for example, "an enduring pattern of continuous or intermittent ties that play a significant part in maintaining the psychological and physical integrity of the individual over time" (Caplan, 1974, p.6). Cohen, Gottlieb, and Underwood (2000) define social support as "any process through which social relationships might promote health and well-being" (p. 4), a definition which is based on well-being while also incorporating relational processes. Henderson (1977) provides a definition which positions social support as necessarily positive by defining it as the positive interactions an individual has with others under stressful conditions. Taking a needs-based approach, Kaplan, Cassel, and Gore (1977) define social support as the gratification of an individual's social needs through the process of interaction with others. Lin, Ensel, Simeone, and Kuo (1979) explicitly incorporate different levels of social networks in their definition of social support as "the support accessible to an individual through social ties to other individuals, groups, and the larger community" (p. 109). Finally,

Berkman (1984) defines social support as the aid, whether tangible or intangible, which an individual obtains from the members of their social network.

The limitations of these definitions of social support are noted by Song et al. (2014). The functionalist approach confuses social support with its associated outcomes while a stress and health related approach restricts the concept of social support to the field of health and assumes that social support will necessarily buffer against stress and/or enhance one's health and well-being. Henderson's (1977) definition assumes positivity yet the reception of support is not necessarily a positive experience (e.g. Fisher, Nadler, & Whitcher-Alagna, 1982; Peeters, Buunk, & Schaufeli, 1995). In contrast, the definition provided by Berkman (1984) captures the fundamental notions of a relational basis and provision of aid, present in the other definitions, while separating social support from its outcomes, avoiding assumptions regarding positivity or health related benefits, and refraining from restricting social support to a specific domain (Song et al., 2014). Thus, Song et al. (2014) conclude that Berkman's definition of social support is the most suitable, adequately capturing the concept of social support while not being over or under inclusive. Consequently, Berkman's definition of social support will be used for the current research.

Social support is recognised as a multidimensional construct. Structure and function are two broad dimensions of social support which have stimulated different lines of research (Chen, 2013b; Stroebe, 2011). The structural dimension, also referred to as social integration, concerns the size and structure of an individual's interpersonal relationships (Stroebe, 2011). For example, research from a structural approach may measure marital status, number of friends, the frequency of interaction with network members, or frequency of involvement in community organisations. The data gathered is largely quantitative, objective, and relatively easy to obtain but provides little

information pertaining to the quality of social support (Antonucci & Johnson, 1994) or how social support relates to various outcomes such as health (Cutrona & Russell, 1987).

In contrast, the functional dimension relates to the functions that different social relationships serve (Chen, 2013b; Stroebe, 2011; Thoits, 1982). In a functional approach quality as opposed to quantity becomes the focus. Within this approach, a variety of functions of social support have been proposed. Some examples include: *emotional support*, which involves the provision of love, care, and empathy; *instrumental support*, which involves direct helping behaviours such as transportation; *informational support*, which involves the provision of information to aid with coping; and *appraisal*, which involves provision of information which is relevant to the individual's self-evaluation (Stroebe, 2011). Consequently, the functional approach provides a more nuanced understanding of the operations of social support and its effects compared to the structural approach. For this reason, a functional approach to social support will be taken in the current research in order to provide a more comprehensive understanding of how social support may affect MIL.

Additional dimensions of social support include subjectivity, context, role relationship, and directionality (Song et al., 2014). The dimension of subjectivity is commonly dichotomised into perceived support and received support, with perceived support describing the perception of the support available if needed and received support describing the support which is actually received (Haber, Cohen, Lucas, & Baltes, 2007). The dimension of context considers the context in which support is given, for example, in an everyday situation as opposed to a crisis situation (Song et al., 2014). Role relationship is concerned with the relationship between the giver and the recipient of support, whether they are, for example, family members, work colleagues, or friends

(e.g. Barrera & Garrison-Jones, 1992). Finally, directionality considers the outcomes associated with giving as well as receiving social support (e.g. Inagaki et al., 2016). Of these dimensions, subjectivity (differences between perceived and received support) has attracted the most empirical attention. In contrast, directionality has received relatively little attention, with most research focusing on the reception of support despite evidence of the importance of giving support (Brown, Nesse, Vinokur, & Smith, 2003; Gruenewald, Karlamangla, Greendale, Singer, & Seeman, 2007). Thus, the current research will also address this gap in the literature and examine the effects of giving social support on MIL.

To summarise, the construct of social support is frequently utilised across a number of disciplines, yet there continues to be a lack of consensus regarding how to define this construct. The definition chosen for the current research is provided by Berkman (1984) who defines social support as the aid, whether tangible or intangible, which an individual obtains from the members of their social network. This definition incorporates the fundamental elements of social support present across all definitions, namely that social support is relationship based and involves provision of aid, while avoiding the limitations associated with various other definitions. It is commonly accepted that social support is a multidimensional construct consisting of the two broad dimensions of structure and function. As a functional approach to social support provides a more comprehensive understanding of the effects of this construct, a functional approach will be taken in the current research. Additional dimensions of social support include subjectivity, context, role relations, and directionality dimensions. Of these dimensions, relatively little research has examined directionality and, specifically, the implications of giving social support for the giver's health and well-being. This gap in the literature will be addressed in the current research.

4.2 Social Support and Meaning in Life

Several studies have found social relationships, social support, and a sense of belonging to be associated with MIL (Dunn & O'Brien, 2009; Hicks & King, 2009; Lambert et al., 2010; Lambert et al., 2013; Takkinen & Ruoppila, 2001) and these findings extends to older adult populations (Bar-Tur et al., 2001; Krause, 2007). Similarly, when asked to identify important sources of meaning, individuals often cite interpersonal relationships (Ebersole, 1998). Moreover, the loss or absence of social relationships and social connection is associated with reduced perception of meaningfulness (Sommer, Williams, Ciarocco, & Baumeister, 2001; Stillman et al., 2009; Twenge, Catanese, & Baumeister, 2003).

To date, the most detailed analysis of relationships between social support and MIL among older adults was carried out by Krause (2007). Recognising that social support serves multiple functions, Krause examined specific dimensions of social support and their relation to MIL. He found that enacted support, and specifically emotional and anticipated support, predicted MIL but the relationship was stronger for anticipated support. In contrast, negative interactions were initially associated with an erosion of MIL but over time were associated with a deeper sense of MIL. Krause's findings confirm that social support does predict MIL among older adults and demonstrates that the various functions of social support differentially relate to MIL.

Although Krause provided a more nuanced understanding of the relationship between social support and MIL, there are limitations to his research. Firstly, the functions of social support which Krause chose to examine were not located within any particular theory of social support. Additionally, for each dimension examined by Krause, the older adult is positioned as the recipient of support rather than the giver of support. An

appropriate framework for addressing these limitations is provided by Weiss' (1974) Social Provisions theory.

4.3 Weiss' Social Provisions

Weiss' (1974) Social Provisions theory is a functional approach to social support. The theory was originally constructed in the context of loneliness whereby Weiss proposed that loneliness is the result of ordinary relational needs going unmet. In his work with individuals who were members of a group for solo parents, Weiss attempted to understand the impact of marriage dissolution on these parents in terms of the losses they experienced and how, or even if, group membership compensated for these losses. He found that the primary reason for joining the group was loneliness and, while individuals often formed close and important relationships in the group, most did not experience a reduction in loneliness but only found it easier to manage. Consequently, Weiss suggested that friendships, although important, do not provide the same social support that a marriage does. To determine whether friendship is too weak to reduce loneliness or whether it provides something altogether different to a marital relationship, Weiss carried out further research with individuals who were married but had few or no friendship relationships. These individuals also experienced a sense of loneliness despite a secure marriage. This loneliness was qualitatively different to that experienced by individuals who had separated from their spouses and Weiss termed it *social* loneliness and the latter *emotional* loneliness to differentiate the two. Weiss concluded that marital and friendship relationships provide in unique ways and meet distinctly different needs. This work formed the basis of Weiss' social provisions framework.

Following his research into marital and friendship relationships, Weiss (1974) proposed that different relationships provide different relational necessities. He termed these

relational necessities ‘social provisions’ and identified six such provisions: attachment, social integration, reassurance of worth, guidance, reliable alliance, and opportunity for nurturance. According to Weiss, these provisions are essential for personal adjustment, for the avoidance of loneliness, and for the individual to feel adequately supported. An individual will maintain relationships so as to gain these provisions. Importantly, Weiss proposed, all of the provisions must be experienced; the absence of one provision cannot be compensated for by other provisions though the salience of different provisions may differ between individuals and contexts. Furthermore, due to the different assumptions underlying different relationships, particular provisions tend to be obtained from particular relationships though a single relationship may deliver several provisions. The absence of each provision is associated with specific cognitive and affective outcomes.

Weiss’ (1974) provisions can be categorised as assistance related and non-assistance related (Cutrona & Russell, 1987). Assistance related provisions include guidance and reliable alliance. Guidance involves the advice or information obtained from others and is most frequently provided by parental figures and teachers or mentors. The absence of guidance leads to uncertainty and anxiety. Reliable alliance refers to the assurance of tangible assistance from others and is most often obtained from family members. The absence of this provision results in a sense of vulnerability.

The non-assistance related provisions include attachment, social integration, reassurance of worth, and opportunity for nurturance. Attachment refers to emotional closeness from which one obtains a sense of security and is most often provided by a spouse or close family or friendship relationships. Social integration also concerns affectionate ties and involves a sense of belonging to a group which shares activities, concerns, and interests and is most often obtained from friends. The ties of attachment and social integration

may provide comfort, pleasure, a sense of identity, and security while their absence results in emotional isolation and social isolation respectively. Reassurance of worth involves the recognition of one's skills, value, and competence by others. It is most frequently obtained from relationships with family and colleagues and absence of this provision results in low self-esteem. Finally, Weiss recognises the importance of being the provider and not just the recipient of support through the inclusion of the provision opportunity for nurturance (Cutrona & Russell, 1987). This provision involves being responsible for the care of others and a sense one is needed and relied on for the well-being of others. It is most often obtained in relationships with one's children and spouse and absence of this provision is thought to result in a sense of meaninglessness.

Using Weiss's (1974) model, it is possible to address the limitations associated with Krause's (2007) research. Firstly, as mentioned, Krause's research lacked a theoretical basis for the selection of social support dimensions. Weiss' model is a comprehensive framework, encompassing the functions social support proposed by other theorists, as shown in Table 2, and provides such a basis for selecting social support dimensions. Secondly, as with most researchers, Krause approached the benefits of social support by assuming that the outcomes are the result of *receiving* support. However, an alternative possibility is that benefits of social support are derived from *giving* support to others.

Although the giving of social support has been largely neglected relative to the reception of social support, empirical research supports the importance of giving support for well-being (Brown, Nesse, Vinokur, & Smith, 2003). Brown et al. (2003) found that providing instrumental and emotional support was associated with reduced mortality while receiving support had no effect on mortality once the giving of support was taken into consideration. Similarly, Brown, Consedine, and Magai (2005) found that, in sample of older adults, giving support was associated with lower morbidity even

after controlling for the opportunity to give and the functional capacity to give. In contrast, receiving support was not associated with lower morbidity. Further, research suggests it is not just the act of giving support which is beneficial for older adults but more specifically the perception of usefulness (Gruenewald et al., 2007). These findings suggest that there are substantial benefits associated with providing support for others and that giving support may, in some instances, be even more beneficial than receiving it. Weiss' theory of social provisions is unique among social relationship conceptualisations as it recognises the importance of being the provider and not just the beneficiary of support through the inclusion of the provision of opportunity of nurturance. As yet, there does not appear to be any research examining whether providing support may enhance MIL among older adults.

It is important to note, opportunity for nurturance, as conceptualised by Weiss (1974), is only one potential dimension of given social support. As there are several dimensions of received social support, so it follows there are analogous dimensions of given social support. The opportunity for nurturance maps onto the subjectivity dimension; it is not concerned with the objective quantity of support given but rather involves the individual's subjective perceptions that they are relied upon by others and that they are needed, important, and responsible for the well-being of others. The current research will focus on this subjective aspect of support given and Weiss' term 'opportunity for nurturance' will be retained to describe this aspect.

Table 2

Models of Social Support

Weiss (1974)	Stroebe and Stroebe (1987)	Moos and Mitchell (1982)	House (1981)	Cobb (1976)	Silver and Wortman (1980)	Schaefer, Coyne, and Lazarus (1981)
Reliable alliance	Instrumental support	Material and services	Instrumental support	—	Material Aid	Tangible support
Guidance	—	Guidance and advice	Informational support	—	Provision of information	Informational support
Reassurance of worth	Validation support	Social regulation	Appraisal support	Esteem support	Validation of feelings/beliefs	—
Social integration	—	Social companionship	—	Network support	—	—
Attachment	Emotional support	Emotional support	Emotional support	Emotional support	Expression of positive affect	Emotional support
Opportunity for nurturance	—	—	—	—	—	—

4.4 Social Provisions and MIL

The experience of the various social provisions may be expected to enhance MIL for a number of reasons. Krause (2012) argues that developing a sense of MIL is a complex, difficult task involving making sense of one's life and one's experiences; developing a clear sense of direction and purpose; and formulating and working towards goals consistent with one's life purpose. Advice, information, and tangible assistance may facilitate these processes and in turn contribute to MIL. In support of this, an examination of the relationship between the various social provisions, stress, and mental health among older adults found that none of the provisions predicted mental health directly. However, under conditions of high stress, reliable alliance and guidance were the two provisions which positively related to mental well-being (Cutrona, Russell, & Rose, 1986). Cutrona et al. suggest that older adults who experience these provisions are able to use these resources in the context of stressful events. As suggested, developing a sense of MIL can be a complex, and conceivably stressful, task, thus the assistance related provisions of guidance and reliable alliance may be important factors for enhancing MIL among older adults.

Existing theories provide a rationale for the proposition that the non-assistance related provisions may also be expected to enhance MIL. As mentioned, social integration provides a sense of identity which, according to Social Identity Theory (SIT), is essential for meaningfulness. SIT proposes that an individual's self-concept consists of personal and social identities (Tajfel, 1978). Personal identities are defined as the part of self-concept in which individuals define themselves in terms of their interests, attitudes, and behaviours that differ from those of other individuals. In contrast, social identity is the part of self-concept which is derived from group membership and the value and emotional significance of that membership (Tajfel, 1978). Social identities provide a

foundation for perceptions of connectedness and collective values. They also provide a foundation for trust which enables the pursuit and attainment of collective goals which would be unattainable as an individual (Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014). Thus, social integration provides a sense of social identity which in turn lays a foundation for establishing values and pursing goals, both of which are important components of MIL.

Similarly, the provisions of reassurance, attachment, and opportunity for nurturance may enhance MIL. As discussed, one of the characteristics of the cognitive component of MIL is a sense that one matters. Reassurance, attachment, and opportunity for nurturance potentially contribute to this sense of mattering by conveying to the individual that they are valued and important. Furthermore, Socioemotional Selectivity theory (Cartensen, Isaacowitz, & Charles, 1999) suggests that these provisions may be particularly important for older adults. Socioemotional Selectivity theory suggests that older adulthood involves the development of a greater preference for emotionally meaningful goals; optimising emotional experience becomes a key concern and so emotionally meaningful social relationships are prioritised. This was confirmed by Krause (2007) who found that emotional support was more strongly associated with MIL than informational or tangible support. Thus, it may be expected that the non-assistance provisions which involve greater emotional closeness than assistance related provisions will be more strongly related to MIL.

Finally, Weiss (1974) suggests that an opportunity for nurturance or, more specifically, feeling needed by others and perceiving that others rely upon one for their well-being, may be particularly important for a sense of MIL. Weiss proposed that a lack of this provision results in a sense of existential meaninglessness. As with the other non-assistance related provisions, opportunity for nurturance may enhance MIL by

providing a sense of purpose and belonging as well as enhancing self-esteem. However, research by Van Orden, Bamonti, King, and Duberstein (2012) provides an avenue for understanding how opportunity for nurturance may convey a particular advantage in terms of enhancing MIL. Van Orden et al. (2012) situate their research within the Interpersonal Theory of Suicide which suggests that the need to contribute to the well-being of others and the need to belong are fundamental needs. Failure to meet these needs results in perceived burdensomeness and thwarted belongingness and these two factors are proximal causes of suicidal ideation. Drawing from this theory, Van Orden et al. (2012) conducted a longitudinal study to examine the relationship between perceived burdensomeness, defined as "a mental state characterised by the belief that others would 'be better off if I were gone'" (p. 855) and MIL among older adults. Consistent with their hypothesis, they found that perceived burdensomeness predicted a decline in meaning in life for older adults. This finding is of particular importance because, as noted earlier, the *reception* of support is not always beneficial to the recipient and has the potential to induce feelings akin to burdensomeness. For example, in their sample of Singaporean older adults, Ang and Malhotra (2016) found that receiving social support could result in feelings of dependency and in turn increases in depressive symptomology. In contrast, opportunity for nurturance may counter feelings of burdensomeness. For example, Thomas (2010) found that giving support was more important for well-being among older adults than receiving support and suggests that this is due to the act of giving enabling participants to feel useful and independent. Thus, opportunity for nurturance, perceiving that others rely upon one for their well-being, may be particularly important for enhancing MIL among older adults by preventing perceptions of burdensomeness.

4.5 Opportunity for Nurturance as a Mediator

As proposed earlier, social support, and specifically the opportunity for nurturance, may be a pathway through which employment, volunteering, and informal care impact MIL. Employment provides older adults with an environment in which to build and maintain social relationships through which assistance and non–assistance related provisions may be experienced. Employment also allows the opportunity for nurturance, either through providing financially for others or directly through the particular work carried out and the provision of goods and services. Similarly, involvement in volunteering activities provides an opportunity for the development of social relationships and for the opportunity to provide for others. Thus, employment and volunteering may present opportunities for individuals to provide social support for others which in turn enhance a sense of MIL. As described by Weiss (1974), these "life organisations can potentially make available the relational provisions an individual might require" (p. 25).

In contrast, the relationship between informal care, opportunity for nurturance, and MIL is potentially more complex. Informal care would appear to provide the greatest prospect to experience opportunity for nurturance, as the role involves direct and often intensive care for another in need. However, research demonstrating that informal carers often feel isolated and unsupported (Jorgensen et al., 2010) suggests that the caregiving role can result in reduced opportunity to engage in other social relationships which would allow for the experience of other social provisions. As noted, Weiss (1974) asserted that, although the relative importance of the provisions will differ for each individual in different contexts and life stages, all of the provisions are needed to feel adequately supported and for healthy adjustment with the absence of a particular provision leading to a particular form of distress. Thus, informal caregiving is an activity and role which allows for the provision of opportunity for nurturance which is

thought to be particularly important for a sense of MIL. However, when informal caregiving results in a loss of other provisions, MIL may be eroded rather than enhanced.

4.6 Chapter Summary

Social support is a complex construct consisting of multiple dimensions including the two broad dimensions of structure and function and additional dimensions of subjectivity, context, role relationship, and directionality. While research into the structural dimension provides a quantitative analysis of social support, functional approaches provide a more nuanced qualitative understanding of the influence of social support by examining the specific functions that social support serves.

Social relationships and social support have been found to be important sources of MIL for older adults, yet there are a number of limitations in this body of research. First, social relationships are generally conceptualised in a global sense. However, specific functions of social support relate differentially to MIL (Krause, 2007), supporting the need for a more nuanced examination of the relationship between social support and MIL. Second, research which has examined specific functions of social support in relation to MIL lacks a theoretical framework. Finally, the effects on MIL of being a giver of social support remain largely unknown.

In light of these areas of limitation, Weiss' (1974) Social Provisions theory provides an appropriate framework for examining the relationship between MIL and social support. Weiss' model addresses social support from a functional approach specifically outlining six functions or provisions of social relations. His model is comprehensive with the six proposed provisions encompassing the functions of social support contained in various

other models. Importantly, the inclusion of the provision of opportunity for nurturance allows for the examination of the relationship between giving social support and MIL. Although all social provisions may be expected to enhance MIL, Weiss (1974) proposes that giving support is especially important for a sense of meaning. Support for this proposal is found in research examining the association between MIL and perceived burdensomeness. Finally, employment, volunteering, and informal care constrain or allow opportunities to experience opportunity for nurturance for others. Thus, it is proposed that opportunity for nurturance mediates the relationships between MIL and employment, volunteering, and informal caregiving.

Chapter 5: Summary and Gaps to be Filled

Empirical research strongly suggests that possessing a sense of MIL is important for physical and psychological well-being. MIL has been associated with better physical, emotional, functional, and social domains of well-being among older adults including higher subjective well-being, and lower levels of depression and mortality, and increased life satisfaction and positive affect among older adults. It would appear only one study has investigated relationships between MIL and health among older adults in Aotearoa New Zealand (Zika & Chamberlain, 1992). Consistent with the wider body of MIL research, Zika and Chamberlain found that MIL was positively associated with positive mental health dimensions (emotional ties and positive affect) and negatively associated with negative mental health dimensions (depression, anxiety, and loss of behavioural/emotional control). However, Zika and Chamberlain's sample was small (initially 150 participants), potential participants were not randomly selected, and the relationship between *physical* health and MIL was not investigated. The limited research on the effects of MIL on physical and psychological health among older adults in the context of Aotearoa New Zealand represents a gap in the literature.

Given the positive outcomes associated with MIL, identifying sources of MIL for older adults and understanding how MIL arises in this population are important tasks for researchers. Research has identified a number of important sources of MIL and confirms that the relative importance of various sources of meaning differs across the lifespan. In particular, findings suggest that meaning for older adults tends to be derived from collective, humanitarian, self-transcendent sources, whereas younger adults tend to derive meaning from more materialistic, personal sources. Despite evidence for differences in sources of meaning among age groups, very little research has investigated sources of MIL among older adults specifically. As demographic and social

changes have resulted in increases in the proportion of older adults working in paid employment, volunteer roles, or as informal caregivers, it is important to consider whether participation in these activities may enhance or erode MIL among older adults.

Both theoretical models of meaning and empirical research suggest that employment and volunteering may serve a meaning-making function, yet older adults are largely excluded from this research. In regards to informal caregiving, research and theory suggest that informal caregiving has the potential to enhance MIL but equally that caregiving may erode a sense of MIL. However, older adult caregivers are also largely excluded from this research with the focus being primarily on the care given *to* older adults not *by* older adults. Furthermore, while different aspects of caregiving have been found to differentially relate to meaning in caregiving, there does not appear to be any research investigating how different aspects of caregiving relate to MIL. Overall, little is known about whether these activities contribute to a global sense of MIL among older adults or the pathways through which they may impact MIL. Further research is needed to address these gaps in the literature and examine the nature of the relationship between employment, volunteering, and informal caregiving and MIL among older adults.

Research suggests that social support is one potential pathway through which employment, volunteering, and informal caregiving may affect MIL. Social support is a multi-dimensional construct found to be associated with MIL. Krause (2007) confirmed that specific dimensions of social support are important for enhancing MIL and that dimensions differ in their relative importance for a sense of MIL. However, this research lacks a theoretical framework to justify the use of particular dimensions of social support. In addition, the directionality dimension of social support has rarely been studied especially in relation to MIL, which results in a biased understanding as only the

outcomes of *receiving* support have been studied while the outcomes of *giving* support have been relatively neglected.

Weiss' (1974) Social Provisions theory provides an appropriate framework to address these limitations and examine the relationships between provision of social support and MIL. Weiss proposes six functions or provisions of social relations: attachment, guidance, reliable reliance, opportunity for nurturance, social integration, and reassurance of worth these provisions are considered necessary for adjustment and avoidance of loneliness. The six provisions of social support that comprise Weiss' model encompass the functions of social support contained in various other models with the addition of the provision of opportunity for nurturance which allows for the examination of the relationship between *giving* social support and MIL. Weiss (1974) proposes that opportunity for nurturance is especially important for a sense of meaning and support for this proposal is found in research examining the association between MIL and perceived burdensomeness. Finally, employment, volunteering, and informal care constrain or allow opportunities for individuals to provide support for others and thus feel needed, important, and responsible for the well-being of others. Further research is needed to examine the contribution of opportunity for nurturance to MIL and whether this provision mediates the relationship between employment, volunteering, and informal care-giving and MIL.

The current study aims to address these various gaps in the literature to extend understandings of the relationships MIL and psychological and physical health; the relationships between employment, volunteering, informal caregiving and MIL; and the role of social support in these relationships among a large sample of older adults in Aotearoa New Zealand.

Chapter 6: The Current Research

The current research investigates the relationships between MIL and physical and psychological health; MIL and employment, volunteering, and informal caregiving; and the role of social support in these relationships among a large sample of older adults in Aotearoa New Zealand.

6.1 Aims

As discussed, a number of factors have contributed to population ageing both in Aotearoa New Zealand and worldwide. As this trend continues, maintaining and enhancing well-being in older adults will become an increasing priority. Although MIL has been found to play an important role in promoting both physical and psychological well-being, there is limited research investigating these relationships in the context of Aotearoa New Zealand. In general, the present study aims to make a further contribution to current understandings of implications of MIL in terms of health outcomes and the factors influencing MIL among older adults in Aotearoa New Zealand. In particular, this study aims to further understandings of (1) how a sense of MIL relates to indicators of physical and psychological health; (2) how employment, volunteering, and informal caregiving, relate to a sense of MIL; (3) what aspects of caregiving contribute to MIL; and (4) how opportunity for nurturance relates to MIL and whether it is a pathway through which employment, volunteering, and informal caregiving effect MIL. The research questions, hypotheses, analyses, and discussion will address these aims in three sections:

Part A: Replication of past research on the health benefits associated with MIL

Part B: Examination of relationships between MIL, employment, volunteering, informal caregiving, and provision of social support

Part C: Predictors of MIL among older adult informal caregivers

6.2 Research Questions

Part A:

(1) Is MIL associated with physical and psychological health among older adults in Aotearoa New Zealand?

Part B:

(2) Is participation in employment, volunteering, and informal caregiving associated with MIL among older adults and, if so, to what extent?

(3) Does providing social support and, specifically, opportunity for nurturance mediate the relationship between MIL and participation in employment, volunteering, and informal care?

Part C:

(4) Is MIL associated with physical and psychological health among older adult informal caregivers in Aotearoa New Zealand?

(5) Are there aspects of caregiving which determine why some caregivers experience more MIL than others?

6.3 Hypotheses

Part A

(1) In relation to the first research question, as outlined in Section 2.3, research has consistently found positive associations between possessing a sense of MIL and

physical and psychological health outcomes. These findings have been replicated in older adult populations and, to an extent, in a small sample of older adults in Aotearoa New Zealand. This leads to Hypothesis One and Two:

H1: MIL will be positively associated with psychological health.

H2: MIL will be positively associated with physical health.

Part B

(2) In relation to the second research question, as argued in Section 3.1, a consideration of theoretical models and empirical research both support the proposition that employment has the potential to serve a meaning making function. It can provide order and structure; an avenue for pursing valued goals; and a social role to provide both a system of values and norms to guide behaviour and the mechanisms to affirm and justify this behaviour. However, it is recognised that employment is not always highly valued or desired by the individual and, when this is the case, employment may undermine one's sense of MIL by, for example, inhibiting the pursuit of valued goals in other life domains. This leads to Hypothesis Three:

H3: Employment will be associated with higher levels of MIL but this relationship will be moderated by satisfaction with employment status.

As argued in Section 3.2, similar to employment, volunteering can provide order and structure; an avenue for pursing valued goals; and a social role to provide both a system of values and norms to guide behaviour and the mechanisms to affirm and justify this behaviour. Volunteering may also provide a sense of

order, purpose, and an avenue for goal attainment. Furthermore, a consideration of the earlier discussion on sources of MIL would suggest that volunteering is likely to enhance MIL specifically among older adults. Volunteering is an allocentric activity and generally involves self-transcendence and generativity which, as noted, have been found to be important sources of meaning for older adults. This leads to the Hypothesis Four:

H4: Participation in volunteer activities will be associated with higher levels of MIL and this relationship will be stronger than the relationship between employment and MIL.

Finally, as discussed in Section 3.3, informal caregiving is a complex experience consisting of multiple stresses and gains. As with employment and volunteering, informal care provides a social role which may afford order and structure, a basis for values, and an avenue for living out values and pursing goals and thus enhancing a sense of purpose and in turn a sense of MIL. However, informal caregiving is a role that, unlike volunteering or employment, is less likely to have been specifically chosen but may be undertaken due to a sense of obligation or because there is no one else to fill the role (Abramson, 2015; Egdell, 2013; Walker et al., 1990). Furthermore, informal caregiving also often involves conflict with, and compromise of, other roles. As there is no clear evidence from the literature or theory to support an a priori hypothesis regarding the relationship between informal caregiving and MIL, this relationship will be examined through an exploratory research question:

Exploratory Research Question: Do older adult informal caregivers experience more MIL than non-caregiver older adults?

(3) In relation to the third research question, as argued in Section 4.4, each of the six social provisions has the potential to enhance MIL among older adults. However, Weiss (1974) proposes that opportunity for nurturance in particular will be strongly associated with MIL. Furthermore, as discussed in Section 4.5, the employment, volunteering, and informal caregiving roles all potentially provide opportunities for the individual to give support to others and in turn enhance a sense of MIL. Thus, Hypotheses Five and Six:

H5: Older adults who experience greater opportunity for nurturance will experience higher MIL.

H6: Opportunity for nurturance will mediate the relationships between MIL and participation in employment, volunteering, and informal caregiving.

Part C:

(4) In relation to the fourth research question, as outlined in Section 2.3 and in the rationale for Hypotheses One and Two, previous research has consistently found positive associations between physical and psychological health and MIL. This leads to Hypotheses Seven and Eight:

H7: MIL will be positively associated with psychological health among older adult informal caregivers.

H8: MIL will be positively associated with physical health among older adult informal caregivers.

(5) In relation to the fifth research question, as discussed in Section 3.3, previous research has found subjective aspects to be significant predictors of meaning in caregiving (Quinn, Clare, & Woods, 2012). Perceived social support in particular consistently predicts better outcomes for caregivers (Chappell & Funk, 2011) and MIL among older adults (Krause, 2007). Furthermore, consistent with Broaden and Build theory (Fredrickson, 2004), the ability to positively appraise the caregiving situation has been associated with higher well-being while negative affect has been associated with lower presence of meaning (Isik & Uzbe, 2015). In contrast, objective aspects of caregiving have been found to be poor predictors of finding meaning in caregiving (Noonan & Tennstedt, 1997). However, difficult experiences may stimulate a search for meaning (King & Hicks, 2009) and, over time, individuals may work to make sense of difficult experiences and so enhance MIL (Krause, 2007). Thus, hypotheses Nine and Ten:

H9: Subjective aspects of caregiving will be significantly associated with MIL and, specifically, negative appraisals will be negatively associated with MIL while positive appraisals and social support will be positively associated with MIL. Social support will be the strongest predictor of MIL.

H10: Objective aspects of caregiving will not be significantly associated with MIL with the exception of care duration which will be positively associated with MIL.

Chapter 7: Method

The current study involves secondary data analysis utilising pre-existing data which was gathered by the Massey University Health and Ageing Research Team as a component of the Health, Work, and Retirement Study.

7.1 The Health, Work, and Retirement Study: An Overview

Commencing in 2006, the Massey University Health and Ageing Research Team (HART) have undertaken a number of research projects aimed at exploring health and ageing in Aotearoa New Zealand. The initial project, the Health, Work, and Retirement (HWR) Longitudinal Study, consisted of two waves of data collection (in 2006 and 2008) and aimed to identify factors underpinning the health and wellbeing of New Zealanders as they transitioned from work into retirement. In collaboration between Massey University and the Family Centre Social Policy Research Unit, the HWR was expanded into the New Zealand Longitudinal Study of Ageing (NZLSA) which also consisted of two waves of data collection (in 2010 and 2012). The primary objectives of the NZLSA were to establish a nationally representative longitudinal study of ageing in New Zealand with a focus on the health and socioeconomic factors which contribute to positive ageing in Aotearoa New Zealand and to conduct cross-country comparisons in order to gain an international perspective for policy formation and practice.

The HWR continued to gather data focused on ageing and work, health, and financial and social well-being with further surveys conducted in 2014 and 2016. In the 2014 wave of data collection the inclusion of a ‘refresh’ cohort aged 55-65 marked the commencement of a ‘steady state’ design whereby new cohorts would be recruited to the HWR on a regular basis in order to ensure the target population is sufficiently

represented. In addition to biennial surveys, an off-wave survey was conducted in 2013: the Inclusion, Contribution, and Connection (ICC) study. The ICC also included a caregiving supplement questionnaire to be completed by participants who provide care for individuals with a long-term illness, disability, or frailty. Although several cohorts have been added since the first survey was conducted, the current study utilises data from individuals who participated in the 2013 and 2014 surveys. Figure 2 presents an overview of the HWR and measures selected for the current research.

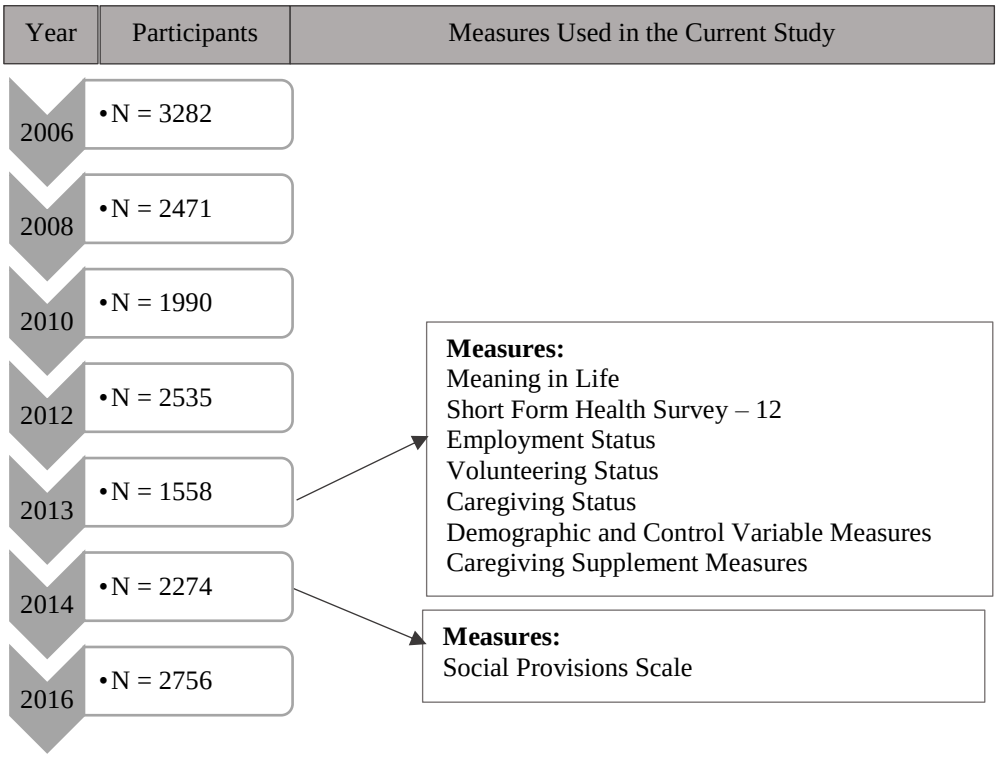

Figure 2. Overview of the waves of the HWR longitudinal study and measures used the current research

These projects were funded by the Health Research Council of New Zealand (HRC05/311), The Foundation for Research Science and Technology (MAUX0606), Ministry of Science, and Innovation (MAUX1205), the Ministry of Business, Innovation and Employment (MAUX1403) and the New Zealand Earthquake Commission. Ethical approval was granted by the Massey University Human Ethics Committee: Southern B, Application 13/30; Southern A Application 15/72.

7.2 Participants and Procedure

The sample for the initial HWR study was randomly selected from the New Zealand electoral roll. As a compulsory register, the electoral roll is highly representative of New Zealand adults with 96% of New Zealanders aged 18 and over registered on the roll as at March 2007. A Māori oversample was deemed important to ensure sufficient representation of this population sub-group. Consequently, the overall sample consists of two sub-samples: a general sample and a Māori sample. The general sample was randomly selected from all adults on the electoral roll aged 55-70. Following this, a Māori sample was randomly selected from all individuals on the electoral roll aged 55-70 who identified their primary ethnicity as Māori. Those individuals in nursing homes, dependent care, or prison were excluded to ensure a community based sample.

Sample size and statistical power.

A number of sources were utilised to determine target sample sizes including previous health-related longitudinal studies and postal surveys, response rates from the HWR pilot study, and recommendations given by Dillman (2000) regarding large-scale postal surveys. Based on the expected final sample size, at $\alpha = .05$ and for 15 independent variables, power to detect a moderate effect was projected to be at least 90% (Borenstein, Rothstein, & Cohen, 1997, as cited in Towers, 2007).

Data was collected by postal survey following Dillman's (2000) five stage Tailored Design method as shown in Table 3. A total of 13,045 surveys were posted out in the initial 2006 survey, 5,264 to the general sub-sample and 7,781 to the Māori sub-sample. This potential sample was reduced to 12,494 after 210 and 341 individuals from the potential general and Māori sub-samples respectively were excluded as they were institutionalised, deceased, or unable to be contacted. Overall, 6,662 surveys were returned representing a response rate of 53%, with 3545 (53%) identifying as non-Maori and 3117 (48%) identifying as Maori. Of these participants, 3282 indicated they would be willing to participate in the longitudinal study. Comparisons with census data indicated that the HWR general and Māori samples were representative of their target populations in terms of age, gender, and ethnic makeup. However, due to oversampling, Māori were over-represented and New Zealand Europeans were under-represented in the overall sample. White collar/professionals were also over-represented in the overall sample (Towers & Noone, 2007).

Table 3.

Five Stages of the Tailored Design Method

Stage	Postal Contact
1	Letter to potential participants advising them of their selection, the selection process, and the arrival of a survey in the week ahead.
2	Questionnaire, cover letter, consent form, postage-paid envelope, and invitation to participate. Sent one week after initial contact.
3	Postcard thanking respondents and encouraging non-respondents. Sent three weeks after initial contact.
4	Replacement questionnaire for non-respondents only. Sent six weeks after initial contact.
5	Postcard of encouragement for all non-respondents. Sent eleven weeks after initial contact.

The current study primarily utilises data from the fifth wave of the HWR study, the 2013 ICC survey as this survey included measures of MIL. Participants in the 2013 ICC survey consisted of those from the initial HWR cohort as well as partners of existing participants who were also invited to take part in the survey. Around 40% of the HWR's initial 3282 participants remained in 2013 with a further 8% lost to death or illness. An online response option was made available but uptake of the online option was low with 51 (3%) surveys completed online 43 of which were partners of original participants. The final ICC sample size consisted of 1558 participants, 1330 were the original HWR participants and 228 were partners of these participants. However, the social support measure was not included in this survey. Consequently, all data was drawn from the 2013 ICC survey with the exception of the social support data which was drawn from the 2014 survey. Thus, only participants who took part in both 2013 and 2014 (n = 1236) are included in the current study. Data from participants' partners collected in the 2013 wave are not included. In addition, data from the Caregiving Supplement included in the 2013 ICC survey was used to answer the research questions in Part C. A total of 148 participants returned the Caregiving Supplement.

7.3 Ethical Considerations

Cultural Responsivity

Under the Treaty of Waitangi[7], where Māori are involved as participants or where the research project is relevant to Māori, researchers are obliged to adhere to the Treaty

[7] The Treaty of Waitangi, signed in 1840, is the founding document of Aotearoa New Zealand. The Treaty was intended to be a partnership, creating unity between the British Crown and Māori (Ministry for Culture and Heritage, 2017). Originally, the Treaty was non-statutory so had no legal authority and breaches and differing understandings of the Treaty have caused conflicts since it was first signed (Orange, 2012). However, starting in the 1970's, there has been a radical shift in the role of the Treaty in Aotearoa New Zealand. Public awareness has increased; successive governments have recognised the

principles of protection, participation, and partnership[8]. To assist with meeting these obligations, a HART Māori Advisory Group was established to ensure the cultural appropriateness of the research project. The Advisory Group provided suggestions and feedback on the project plan and evolving project. Specific roles included advising on the planning elements of the HART projects; providing a forum for discussion of issues about methods, materials, and outputs where relevant to Māori; advising on the cultural appropriateness of outputs; and peer review of academic work explicitly analysing data of Māori participants. A Māori researcher was available should participants request Māori researchers as a point of contact.

Informed Consent

An information letter (see Appendix I) was provided to participants outlining the study, its aims, and their rights as participants. Participants were informed that return of the paper based questionnaire or completion of the online questionnaire implied consent.

Confidentiality

As the 2013 ICC survey and 2014 survey were part of a longitudinal study, participants' names and addresses were known. All such personal information was stored separate from the questionnaire data in a secure database accessible only by the research team. Information was linked across studies by means of a unique code for each participant and participants remained anonymous as returned questionnaires could not be linked to individual names. Questionnaires and codes were stored separately in locked research

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significance of the Treaty; and legislation has given legal authority to the Treaty of Waitangi (Orange, 2012).

[8] These three broad principles were suggested by the 1998 Royal Commission on Social Policy for the practical application of the Treaty (Hayward, 2012). Applied to a research context, partnership requires researchers to work with Maori communities to ensure Maori rights are respected. Participation requires that, for research involving Māori, Māori are included in all stages from design to dissemination of findings. Protection requires that in the research process, researchers protect Maori culture, concepts, values, practices, and data (Massey University, 2015).

rooms. Online questionnaires were downloaded, stored on a secure server, and online copies removed once the survey phase was completed. All computer files were password protected.

Risk of Harm

Extensive review by members of the research team and consultation with colleagues was conducted in regards to the appropriate wording of questions which had the potential to be embarrassing or cause discomfort. Pilot testing of the questionnaire was carried to obtain feedback in regards to the potential for offence or discomfort from sensitive questions. A formal review of the questionnaire with the Māori Advisory Group was also carried out to evaluate cultural appropriateness of the content. Participants were informed that they were not obliged to answer questions and that their answers would remain anonymous. Free phone and email contacts were provided should participants have any queries.

Dissemination of Findings

Participants were provided with phone contacts and the web address of an online site dedicated to the HART research projects. The site provides general information as well as answers to frequently asked questions, and access to newsletters, recent publications and media releases. Annual postal updates outlining important and interesting findings are sent to participants. Results of HART research projects are also disseminated through conference presentations and academic journal publications.

7.4 Measures

Dependent variables

Meaning in Life. Meaning in life was assessed using the shortened version of the Meaning in Life scale constructed by Krause (2004). The original scale consisted of

16 items assessing four dimensions of meaning: having values, sense of purpose, goals, and the ability to reconcile the past. The shortened version was developed using confirmatory factor analysis and consists of 8-items with two items each corresponding to one of the four dimensions (Krause, 2007). Examples of items include, '*I have a sense of direction and purpose in my life*' and '*I have a system of values and beliefs that guide my daily activities*'. The correlation between the longer version and the shorter version of the meaning scale was .98 ($p < .001$). Responses are made on scale of 1 (strongly disagree) to 5 (strongly agree). The scale was designed specifically to be used with older adults (Krause, 2004). Items are summed to give an overall score ranging from 8 to 40 with higher scores indicating a deeper sense of meaning in life. Confirmatory factor analysis was used to establish the construct validity of the shortened version of Meaning in Life Scale (Krause, 2004) and the scale has demonstrated internal consistency in a sample of older adults ($\alpha = 0.80$; Krause, 2007). In the current study, Cronbach's alpha coefficient was .90.

Physical and psychological health. The Physical Component Summary (PCS) and Mental Component Summary (MCS) scales of the Short Form Health Survey-12 version 2 (SF-12 v2; Ware, Kosinki, & Keller, 1996), a measure of health and quality of life, were used to assess physical and psychological health. The SF-12 v2 was derived from the lengthier Short Form Health Survey-36 (SF-36) and consists of 12 items which were found to account for 90% of the variability SF-36 scores (Ware et al., 1996). The 12 items measure health across eight domains: physical functioning (two items), role limitations due to physical health (two items), bodily pain (one item), general health (one item), vitality (one item), social functioning (one item), role limitations due to emotional health (two items), and mental health (two items). The first four domains

relate to physical health and constitute the PCS scale. The remaining four domains relate to mental health and constitute the MCS scale. An example item from the PCS is: '*During the past 4 weeks, how much did pain interfere with your normal work (including work outside the home and housework)?*' with the response options ranging from 1 (not at all) to 5 (extremely). An example item from the MCS is: '*How much time during the past 4 weeks have you felt down heartened and depressed?*' with response options ranging from 1 (all of the time) to 5 (none of the time). Scoring is norm based with scores standardised to have a mean of 50 and standard deviation of 10. Normative scores derived from the HWR 2006 survey and factor score coefficients derived from the 1996/97 New Zealand Health Survey (Ministry of Health, 1999) are utilised to calculate PCS and MCS scores. Higher scores on the PCS and MCS represent better physical and psychological health respectively. The SF-12 has been used in other longitudinal studies of ageing (e.g. Bentley et al., 2013; Seib, Anderson, & Lee, 2014) and has demonstrated convergent validity, construct validity, test-retest reliability, and internal consistency (PCS: $\alpha = 0.87$, MCS: $\alpha = 0.80$) among a sample of older adults (Resnick & Parker, 2001).

Independent Variables

Social support. The 24-item Social Provisions Scale (SPS; Cutrona, Russell, & Rose, 1986) was used to assess social support. The SPS examines the degree to which an individual's interpersonal relationships provide the various social provisions described by Weiss (1974): attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. Each provision is measured by four items, two of which describe the absence of the provision, for example, '*Other people do not view me as competent*', and two of which describe the presence of the provision, for example: '*I feel a strong emotional bond with another person*'. Participants are

asked to indicate to what extent they agree that each statement describes their current relationships with other people on a scale from 1 (strongly disagree) to 4 (strongly agree). Negatively worded items are reversed and items are summed to give a score for each social provision (ranging from 4 to 16) and an overall score (ranging from 24 to 96). A higher score indicates greater perceived social support. The SPS has demonstrated construct, predictive, and discriminative validity (Cutrona & Russell, 1987). The SPS has also demonstrated high reliability with internal consistencies ranging from $\alpha = 0.89$ (Green, Furrer, & McAllister, 2011) to $\alpha = 0.92$ (Vogel & Wei, 2005). Internal consistencies of the subscales ranged from $\alpha = 0.60$ for *opportunity for nurturance* to $\alpha = 0.83$ for *reliable alliance* (Vogel & Wei, 2005). Cronbach's alpha coefficient was 0.88 in the current study. The Opportunity for Nurturance subscale was used to assess support provision. This subscale consists items which examine the individual's perceptions that others rely on them for their well-being. Cronbach's alpha coefficient was 0.69 for the Opportunity for Nurturance sub-scale.

Employment. Employment status was assessed using direct questions asking participants to identify their current work status from a list provided. A dichotomous variable was created by collapsing possible employment and unemployment statuses into two categories. Participants were categorised as 'in paid employment' if they identified their status as: '*full-time paid work, for an employer', 'part-time paid work, for an employer', 'full-time self-employed paid employment', 'part-time self-employed paid employment', 'flexible work schedule negotiated with employer', 'project or contract work (short term and full time)', or 'project or contract work (short term and part-time)*'. Participants were categorised as 'not in paid employment' if they identified

their employment status as '*fully retired', 'full time homemaker', 'full time student', 'unable to work due to health or disability issue'*, or '*unemployed and seeking work'*.

For those participants in paid employment, job satisfaction could be determined using the single job satisfaction item. Participants were asked to indicate their degree of agreement with the statement '*I feel fairly well satisfied with my current job'* (Brayfield & Rothe, 1951) on a scale from 1(disagree) to 5(agree). However, this question did not allow for the determination of satisfaction with employment status for participants not in paid employment. Consequently, a dichotomous variable (0 = satisfied, 1 = not satisfied) was created to assess satisfaction with employment status. Using the same employment statuses listed above, participants were asked to indicate both their preferred work status and current work status. Participants were categorised as 'satisfied' if their preferred work status matched their current work status and 'not satisfied' if their preferred and current work statuses did not match.

Volunteering. Scores from five items were summed to create an index of volunteering frequency. Participants were asked to indicate how often they contributed time and/or labour to each of the following: *providing a community service; providing a good; activism, campaigning, or advocacy; environmental stewardship; and mahi a whānau/Kapahaka, marae or hui*[9]. Responses were made on a scale from 1 (never) to 7

[9]This item was included to incorporate activities and components specific to Māori culture that would be considered volunteer work as it is defined in the current research. The terms can be understood as follows:
Mahi a whānau= while 'whānau' is often loosely translated as 'family', the meaning is more complex. It can refer to individuals bound by familial and ancestral ties but also those who are associates, close friends, those who come together for a common purpose, and those who are living as well as those who have died. Whānau comprises not only a physical dimension but also spiritual and emotional dimensions (T. Walker, 2017). Mahi a whānau may be understood as work within such Māori communities.
Hui = conference, meeting, or gathering.
Marae= a place where a community gather for the purposes of celebration, interaction, grieving, and discussion. The Marae is often considered central to Māori community and identity and is a place where

(daily). One was subtracted from each score so that a score of 0 represented never and scores ranged from 0 (never) to 6 (daily). Scores were summed to create an index of volunteering frequency ranging from 0 to 30.

***Informal Caregiving*.** Participants were asked whether they had provided care for someone with a long-term illness, disability, or frailty within the last twelve months with 'providing care' defined as 'practical assistance for at least 3 hours a week'.

Demographic and control variables

Age, gender, ethnicity, geographic location, relationship status, socio-economic status, and educational level may confound the relationships between health, MIL, social support, and employment, volunteering, and informal caregiving. Thus, these variables were included as control variables in data analyses.

Age. Participants were asked their date of birth (including day, month, and year) and age at completion of the 2013 ICC survey was calculated.

Gender. Participants were asked to identify as male or female.

Ethnicity. Participants were asked to identify which ethnic group they identify with the most from '*New Zealand European', 'Māori', 'Samoan', 'Cook Island Māori', 'Niuean', 'Chinese', 'Indian', 'Tongan',* or *'Other'*. The Samoan, Cook Island Māori,

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Māori culture, including world-view, values, language, values, and social etiquette are given full expression (Whaanga, 2013).

Niuean, or Tongan categories were collapsed to form the category '*Pacific Islander'* and the Chinese and Indian categories were collapsed to form the category *'Asian'.*

Relationship status. Participants were asked to identify their relationship status as either '*married', 'civil union/de facto/partnered relationship', 'divorced or permanently separated', 'widow or widower',* or *'single*. For the current study, a dichotomous variable (0 = Not Partnered, 1 = Partnered) was created. Participants who identified as 'married' or in a 'civil union/de facto/partnered relationship' categorised as 'partnered' and participants who selected any of the remaining relationship statuses were categorised as 'not partnered.'

Educational level. Level of education was measured using a forced choice question. Participants were asked whether they had '*no qualifications'; 'secondary school qualifications (e.g. School Certificate, University Entrance, NCEA)'; 'post-secondary certificate, diploma, or trade diploma';* or *'university degree'*. A dichotomous variable was created (0 = up to secondary school qualifications, 1 = post-secondary qualifications) with participants with no qualifications or secondary level qualifications grouped together and those with post-secondary or university qualifications grouped together.

Socio-economic status. Socio-economic status was measured using the Economic Living Standards Index Short Form ($ELSI_{SF}$; Jensen, Spittal, Krishnan, 2005). The $ELSI_{SF}$ is a New Zealand non-income scale measuring material wellbeing developed as a component of the Ministry of Social Development's Living Standards research (Jensen et al., 2005). A non-income based measure was used in recognition income is often a poor indicator of living standard as it does not take into account

factors such as the capacity of households to manage resources and the local cost of living (Jensen, Spittal, Crichton, Sathiyandra, & Krishnan, 2002). The $ELSI_{SF}$ centres on what an individual is consuming; their household facilities; and their forms of social participation, and recreation, rather than measuring the resources, such as income or assets, which enable or constrain individuals across these domains.

Specifically, the $ELSI_{SF}$ consists of 25 items across four categories: Economising Items, Ownership Restrictions, Social Participation Restrictions, and self-ratings of living standard. For the first two categories, Economising Items and Ownership Restrictions, respondents indicate whether or not they have the possession or participate in the activity as described by the item. Examples of possessions and activities included are '*personal computer*' and '*have holidays away from home for at least a week every year*'. Responses are made on a four-point scale with the following options: 'yes, I have it', 'no, because I don't want it', 'no, because of the cost', or 'no, for some other reason'. For the third category, Social Participation Restrictions, respondents indicate whether they have restricted certain activities in order to keep down costs. An example is, '*postponed or put off visits to the doctor to help keep down costs*', and responses are made on a three-point scale with the options: 'not at all', 'a little', or 'a lot'. The fourth category, a self-assessment category, consists of three questions assessing the individual's self-perceived standard of living, for example, '*generally, how would you rate your material standard of living*'. Responses are made on a five-point scale (four-point scale for the final question). Scores are summed to produce a range from 0 to 41. To truncate outliers, respondents scoring below 10 are assigned a score of 10. Each respondent then has 10 subtracted from their total score so the lowest possible standard of living is represented by a score of 0. The $ELSI_{SF}$ has demonstrated high internal

consistency (α =0.88) and as well as convergent validity, positively correlating with measures such as equivalised disposable income and negatively correlating with measures such as problems with accommodation and lacking basic needs (Jensen et al., 2005).

Subjective Caregiving Aspects

Reasons for inclusion of subjective aspects are discussed in Section 3.3 but are briefly mentioned here. Positive and negative appraisals were included in the analyses as subjective appraisals of the caregiving experience have been found to predict situational meaning. Relating to an experience in a positive or negative manner is theoretically linked to well-being (Fredrickson, 2004) and MIL (Frankl, 1959) and finding positive aspects in caregiving has been associated with enhanced well-being (Walker et al., 2016). Similarly, perceived social support was included in analyses as it has been found to consistently predict better outcomes for caregivers (Chappell & Funk, 2011) and MIL among older adults (Krause, 2007).

Negative and Positive Perceptions. Negative and positive perceptions were measured using the Carers of Older People in Europe (COPE) Index, a brief 15 item measure which assesses caregiver's subjective appraisals of the caregiving situation. The COPE Index comprises three subscales: Positive Value, Negative Impact, and Quality of Support. The Quality of Support subscale was not utilised in the current study. The Negative Impact subscale consists of 7 items assessing negative perceptions, for example, *'Do you feel trapped in your role as a caregiver?'* The Positive Value subscale consists of 4 items assessing positive perceptions of the caregiving situation,

for example, *'Do you find caregiving worthwhile?'*. Responses are made on a scale ranging from 1 (never) to 4 (always). Responses are summed to give an overall Negative Impact score (ranging from 7 to 28) and a Positive Value score (ranging from 4 to 16). Principal components analysis was used to establish the construct validity of the COPE Index and the sub-scales have demonstrated concurrent validity, significantly correlating with a number of measures such as psychological well-being and quality of life in samples of caregivers and across six European nations (Balducci et al., 2008). Concurrent validity of the COPE Index was also established in a sample of caregivers in Aotearoa New Zealand (Roud, Keeling, & Sainsbury, 2006). The Negative Impact subscale has demonstrated good reliability ($\alpha = 0.83$) though the reliability of the Positive Value subscale was less satisfactory ($\alpha = 0.64$; Balducci et al., 2008). In the current study, Cronbach's alpha was 0.86 for the Negative Impact subscale and 0.74 for the Positive Value subscale.

Social Support. Social support was assessed using the SPS as described above.

Objective Caregiving Aspects

Duration of care. Participants were asked how long they had been caring in years and months. Responses given in terms of months were converted to years.

Frequency of care. To assess frequency of care, participants were asked how many hours per week they provided care for the care recipient.

Extent of care. Participants were asked to indicate whether they provided help to the care recipient for a 10 different Activities of Daily Living (ADLs) and 11 different Instrumental Activities of Daily Living (IADLs). ADLs were defined as basic, everyday self-care tasks, for example, '*bathing and showering', 'dressing',* and *'eating'*. IADLs represent complex skills needed to live independently, for example, *'managing their money', 'taking medication'* and *'transportation'.* One mark was given for each positive response and items were summed to give an overall score indicating the number of ADLs (ranging from 0-10) and IADLs (ranging from 0-11) the participant carried out for the care recipient.

Care Relationship. Participants were asked to identify whether the person they cared for was their *'Spouse or partner', 'Mother or father', 'Son or daughter', 'Brother or Sister', 'Mother-in-law or father-in-law', 'Other relative', 'Friend',* or *'Other'.* Responses of '*Friend*' or '*Other*' were categorised as 'non-family' and all other responses were categorised as 'family' to create a dichotomous variable (0 = non-family, 1 = family).

Living Situation. Participants were asked to identify the recipient's living situation by indicating one of the following: '*Live with you', 'Live with their family/whānau', Live with their friends', 'Live alone', Live in a nursing home or care facility',* or *'Other'*. A dichotomous variable (0= no co-residence, 1= co-residence) by recoding '*Live with you'* as 'co-residence' (1) and all other responses as 'no co-residence' (0).

7.5 Data Analysis

Quantitative methods were used to analyse the data. All statistical analyses were conducted using IBM SPSS Version 24 and PROCESS Version 2.16, the observed variable path analysis modelling tool for SPSS.

Pearson's Product Moment Correlation, ANOVA, and independent samples *t*-tests were used to test bivariate relationships. Hierarchical linear regression and mediation analyses using ordinary least squares path analysis and non-parametric bootstrapping (Hayes, 2013) were used for multivariate analyses.

Chapter 8: Results

8.1 Results Part A and Part B

Part A: Replication of past research on the health benefits associated with MIL

Part B: Examination of relationships between MIL, employment, volunteering, informal caregiving, and provision of social support.

Data Screening

Missing Data. Missing data is commonly classified as missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR; Tabachnick & Fidell, 2013). When MCAR, the distribution of missing data is not related to other variables in the data set; the pattern of missingness is truly random. When MAR, the distribution of missingness is related to other variables in the data set. When MNAR, the missingness is related to the missing values themselves. The pattern of missing data determines which method of dealing with missing data is appropriate.

Missing values analysis was carried out to explore missing data. Two participants were missing more than 50% of data and these participants were removed from the sample. Variables with a high proportion (> 5%; Tabachnick & Fidell, 2013) of missing data were employment status (missing 5.9%) and mental and physical health (missing 12.3% each). The satisfaction with employment status variable was missing considerably more data than any other variable (38.0% missing data). As discussed below, the decision was made to remove this variable.

Although Little's MCAR was not significant (χ^2 = 82.27, *df* = 76, *p* = .311), suggesting values are missing completely at random (MCAR), significance tests were carried out to determine the significance of missingness (Tabachnick & Fidell, 2013). Dummy variables were created (0 = missing, 1 = not missing) and a series of *t*-tests and chi-square analyses were carried out. None of the tests of missingness were significant for the employment status variable. However, participants with missing data on the mental and physical health variables were older (*M* = 69.78) than those with non-missing data (*M* = 68.32) and this difference was significant (*t* = 3.80, *df* = 1232, *p* < .001). The effect size was small to medium (*g* = .33). Participants with missing data on the mental and physical health variables also had lower economic living standard (*M* = 23.22) than those with non-missing data (*M* = 24.47) and this difference was significant (*t* = -2.30, *df* = 1172, *p* = .022). However, the effect size was small (*g* = .26). Mean differences on other continuous variables were not significant.

Chi-square tests of independence were performed to examine the relation between missingness on mental and physical health variables and categorical variables. The only significant relationship was between missingness and educational status (χ^2 (1, *n* = 1207) = 4.65, *p* = .031, *phi* = .062). Those with up to secondary level education were more likely to be missing data on the health variables than those with post-secondary level qualifications.

Following the analysis of missing data, the decision was made to apply listwise deletion to deal with missing data. Listwise deletion is not recommended if (1) missing data is not MCAR as it can result in biased estimation or (2) if the data set is small and the proportion of missing data is large as the removal of cases from analyses results in a

loss of power. For the current data set, although significance tests indicated that missingness was predicted from other variables, and therefore suggesting the missing data was not MCAR, the effect sizes were very small or small to medium and Little's MCAR was not significant. Furthermore, the sample size was large and the proportion of missing data relatively negligible so listwise deletion would not result in a substantial loss of power. Thus, list-wise deletion was applied.

Outliers. After initial examination of descriptive statistics, two cases were removed as participants were younger than 55 and thus outside of the target age range of 60+. Values for all other variables were in the accepted ranges.

Univariate outliers. For continuous variables, cases are considered potential univariate outliers when *z* scores are very large, usually in excess of 3.29 ($p < .001$, two tailed; Tabachnick & Fidell, 2013). However, in large data sets, some *z* scores outside of this range are to be expected and the 3.29 threshold may be adjusted to 4 to take this into account (Hair, Black, Babin, Anderson, & Tatham, 2006). For the data set containing data from all participants, the threshold for univariate outliers was set at 4 standard deviations above or below the mean. At this threshold, 17 univariate outliers were identified. Two cases were extremely low on the MCS and were detached from the distributions. These cases were considered not representative of the target population and were removed from further analyses. A further 6 cases were low on the SES measure, 3 cases were high on the volunteering measure, and 6 cases were low on the MIL measure. However, the scores were within the acceptable limits; examination of histograms demonstrated they were not detached from the distributions; and comparison of distribution means with and without the outliers suggested they did not affect the mean in a substantial manner. Thus, the decision was made to retain these outliers.

Multivariate Outliers. Multivariate outliers were detected using Mahalanobis Distance. Mahalanobis values were evaluated using the χ^2 distribution with alpha set at the conservative level of .001. A total of 13 multivariate outliers were detected. Analyses were run with and without outliers. As outcomes were the same, the decision was made to retain outliers for added power.

Assumptions of multivariate analyses. Multivariate analyses are based on a number of assumptions regarding the distribution of variables and the relationships between variables. The fit between these underlying assumptions and the data set are discussed below.

Normality. Normality, the assumption that the dependent variables are normally distributed, was assessed using histograms, skewness and kurtosis values, expected normal probability plots, and detrended expected normal probability plots. SF-12 Mental Health and SF-12 Physical Health demonstrated departure from normality. Although logarithmic transformations improved normality of these distributions, the departure from normality was not considered substantial, particularly given the large sample size. When sample size is large departure from normality becomes less problematic as explained by the Central Limit Theorem. Thus, due to difficulty associated with interpretation of transformed data, transformations were not applied.

Linearity and homoscedasticity. Linearity describes the situation where the dependent variable is linearly related to the independent variables. Homoscedasticity refers to the situation where the variability of the dependent variable is approximately the same across all values of the independent variable which predicts it.

Homoscedasticity and linearity were assessed by examining residual scatterplots which indicated these assumptions were satisfied.

Multicollinearity. Multicollinearity refers to a state whereby independent variables are highly correlated with one another. When multicollinearity exists, it becomes difficult to assess the relative importance of the individual independent variables in explaining the dependent variable. Multicollinearity was evaluated using variance inflation factor (VIF) and tolerance values. Guidelines provided by Field (2013) suggest that if VIF values are higher than 10 and tolerance values lower than 0.1 then multicollinearity is a problem. All VIF values were lower than 5 and tolerance values greater than 0.2 suggesting multicollinearity was not present.

Descriptive Statistics

Data screening procedures resulted in a final sample of 1232 participants. Demographic characteristics of the sample are presented in Table 4. Females outnumbered males by 8.80% and the majority of participants were New Zealand European (60.55%), had a good economic standard of living (58.36%), and were married (64.44%). Of the total sample, 491 (39.85%) participants were in paid employment, 653 (53.00%) of participants were identified as volunteers, and 187 (15.18%) identified as informal caregivers.

Table 4

Demographic Characteristics

		Range	Mean (SD)
Age		60-77	68.53 (4.51)
			Frequency (%)
Gender			
	Female		670 (54.38)
	Male		562 (45.62)
Ethnicity			
	NZ European		746 (60.55)
	Māori		399 (32.39)
	Pacific Islander		72 (5.84)
	Asian		3 (0.24)
	Other		2 (0.16)
Educational Level			
	No Qualifications		363 (29.46)
	Secondary School		257 (20.86)
	Post-Secondary		388 (31.49)
	University		197 (15.99)
	Missing		27 (2.19)
Relationship Status			
	Married		794 (64.44)
	Civil Union/de facto/partnered		75 (6.09)
	Divorced/ separated		113 (9.17)
	Widow/widower		155 (12.58)
	Single/Never Married		69 (5.60)
	Missing		26 (2.11)
Economic Living Standard			
	Hardship		118 (9.58)
	Comfortable		335 (27.19)
	Good		719 (58.36)
	Missing		60 (4.87)

Descriptive statistics for outcome variables are presented in Table 5. The mean MIL score (M = 25.11) was slightly lower than that reported in previous research (28.75, Krause, 2007, and 27.70, Krause, 2009). The mean score of 11.99 on the Opportunity for Nurturance subscale was similar to the mean of 12.28 found by Cutrona, Russell, and Rose (1986).

Table 5

Descriptive Statistics for Outcome Variables

	M	*SD*
Meaning in Life[a]	25.11	3.76
PCS[b]	45.79	9.71
MCS[c]	50.47	9.57
Opportunity for Nurturance[d]	11.99	2.30

[a]Meaning in Life score range: 8 - 40
[b]PCS = Physical Component Summary. PCS scores are standardised (*M* = 50, *SD* = 10).
[c]PCS = Physical Component Summary. MCS scores are standardised (*M* = 50, *SD* = 10).
[d]Opportunity for Nurturance score range: 4 - 16

Bivariate Analyses

Bivariate analyses including *t*-tests, ANOVA, and Person's product moment correlations were carried out to test the relationships between meaning in life, control variables, health variables, and employment, volunteering, and caregiving variables.

The results of bivariate analyses between control variables and physical and mental health are presented in Table 6. There was no statistically significant difference in physical health scores between participants with up to secondary level qualifications and those with post-secondary qualifications. Age, gender, and educational level were not significantly related to mental health and these variables were not included in multivariate analyses.

Table 6

Results of Bivariate Analyses between Control Variables and Health Outcome Variables

	PCS[a]		MCS[b]	
	r	*p*	*r*	*p*
Age	-.139	< .001	.035	.443
SES	.332	< .001	.428	< .001
	t	*p*	*t*	*p*
Gender	-2.43	.015	0.26	.798
Relationship Status	-4.14	< .001	- 4.52	< .001
Educational Level	-1.86	.063	- 1.36	.174
Employment Status	-7.07	< .001	- 1.84	.066
	F	*p*	*F*	*p*
Ethnicity	4.55	.011	6.85	.001

[a]PCS = Physical Component Summary
[b]MCS = Mental Component Summary

The results of bivariate analyses between MIL and control variables are summarised in Table 7. Economic living standard was significantly related to MIL and there were statistically significant differences in MIL between genders and between participants with post-secondary qualifications and those with up to secondary qualifications. There was a significant relationship between SES and MIL, $r = .25$, $p < .001$. MIL scores were higher for females ($M = 25.33$, $SD = 3.87$) compared to males ($M = 24.85$, $SD = 3.59$) this difference was significant, $t(1221) = 2.19$, $p = .029$; however, the effect was small $d = .25$. MIL was higher for participants with post-secondary qualifications ($M = 25.41$, $SD = 3.60$) compared to those with qualifications no higher than secondary level ($M = 24.79$, $SD = 3.88$) and the difference was significant, $t(1196) = -2.84$, $p = .005$; again, effect size was small, $d = .32$. Age, relationship status, and ethnicity were not significantly related to MIL and were excluded from further analyses.

Results of bivariate analyses between MIL and predictor variables are presented in Table 8. All relationships were significant except the relationship between employment and MIL and caregiving and MIL.

Table 7

Results of Bivariate Analyses between Control Variables and MIL

	r	*p*
Age	.018	.529
SES	.246	< .001
	t	*p*
Gender	2.19	.029
Relationship Status	-1.59	.112
Educational Level	-2.84	.005
	F	*p*
Ethnicity	2.01	.135

Table 8

Results of Bivariate Analyses between MIL and Predictor Variables

Predictor Variable	*t*	*p*
Activities		
Employment	-1.57	.116
Informal Caregiving	1.01	.290
	r	*p*
Volunteering	.151	< .001
Health		
PCS[a]	.139	< .001
MCS[b]	.379	< .001
Social Support		
Opportunity for Nurturance	.190	< .001

[a]PCS = Physical Component Summary
[b]MCS = Mental Component Summary

Multivariate Analyses

Results of multivariate analyses are organised according to the hypothesis being addressed. Except where indicated, all reported regression coefficients are standardised (β = standardised coefficient).

Hypothesis One: MIL will be positively associated with psychological health.

A hierarchical linear regression was carried out to determine whether MIL predicted psychological health (Mental Component Summary; MCS) after controlling for demographic variables. Results of the hierarchical regression are displayed in Table 9.

Demographic variables found to be significant predictors of psychological health in bivariate analyses (economic living standard, relationship status, and ethnicity) were entered at Step 1, and explained 18.6% of the variance in psychological health. After entering MIL at Step 2, the model explained 26.7% of the total variance in psychological well-being ($F(5, 1015) = 74.01$, $p < .001$). After controlling for economic living standard, relationship status, and ethnicity, an additional 8.1% of the variance in psychological health was explained by MIL (R^2 change = .081, F change (1, 1015) = 111.85, $p < .001$). In the final model, significant variables were SES ($\beta = .333$, $p < .001$), being of Māori ethnicity compared to New Zealand European ($\beta = -.076$, $p = .007$), and MIL ($\beta = .295$, $p < .001$). Relationship status was not statistically significant.

Table 9

Summary of Hierarchical Regression for Variables Predicting Psychological Health

		Model 1	Model 2	
Step	Variable	β	β	sr^2
1	SES	.411***	.333***	.097
	Relationship Status[a]	.038	.035	.001
	Ethnicity			
	NZ European (0), Māori (1)	-.054	-.076**	.005
	NZ European (0), Other (1)	-.033	-.023	.001
2	MIL		.295***	.081
	R^2	.186***	.267***	
	ΔR^2		.081***	

[a] Dummy Coded: 0=Not Partnered, 1=Partnered.
*p<0.05, ***p<.001

Hypothesis Two: MIL will be positively associated with physical health.

A hierarchical linear regression was carried out to determine the ability of MIL to predict physical health (Physical Component Summary; PCS), after controlling for demographic variables. Results of the hierarchical regression are displayed in Table 10.

Entered at Step 1 were the demographic variables found to be significant predictors of physical health in bivariate analyses: age, economic living standard, gender, relationship status, employment and ethnicity. These variables explained 15.6% of the variance in physical health. After entering MIL at Step 2, the model explained 15.9% of the total variance in physical well-being ($F(8, 965) = 22.73$, $p<.001$). After controlling for relationship status and economic living standard, an additional 0.2% of the variance in physical health was explained by MIL, this was not a significant contribution to physical health (R^2 change = .002, F change (1, 965) = 2.59, $p = .108$). In the final model, significant variables were age ($\beta = -.088$, $p = .008$), SES ($\beta = .288$, $p < .001$),

and employment (β = .133, p <.001). Ethnicity, relationship status, gender and MIL were not significant contributors.

Table 10

Summary of Hierarchical Regression for Variables Predicting Physical Health

		Model 1	Model 2	
Step	Variable	β	β	sr^2
1	SES	.300***	.288***	.071
	Relationship Status[a]	.054	.052	.003
	Ethnicity			
	NZ European (0), Māori (1)	-.040	-.043	.002
	NZ European (0), Other (1)	.006	.008	.000
	Age	-.086**	-.088**	.006
	Gender[b]	.030	.034	.001
	Employment[c]	.136***	.133***	.014
2	MIL		.050	.002
R^2		.156***	.159***	
ΔR^2			.002	

[a] Dummy coded: 0=Not Partnered, 1=Partnered.
[b] Dummy coded: 0=Female, 1=Male.
[c] Dummy coded: 0=Not in paid employment, 1= In paid employment.
* p<.05, ** p<.01, ***p<.001

Exploratory Research Question: Do older adult informal caregivers experience more MIL than non-caregiver older adults?

Hypothesis Three: Employment will be associated with higher levels of MIL but this relationship will be moderated by satisfaction with employment status.

Hypothesis Four: Participation in volunteer activities will be associated with higher levels of MIL and this relationship will be stronger than the relationship between employment and MIL.

As indicated earlier, bivariate analyses (independent samples t-test) found no significant difference in MIL scores for participants who were informal caregivers (M = 24.80, SD

= 4.18) and those who were not informal caregivers (M = 25.13, SD = 3.70; t (1180) = 1.06, p = .346, two-tailed). Similarly, no significant difference in mean MIL scores was found between participants in paid employment (M = 25.33, SD = 3.88) and participants not in paid employment (M = 24.98, SD = 3.52; t (1149) = -1.57, p = .116, two-tailed).

Unfortunately, after consideration of a number of factors, it was deemed inappropriate to carry out analysis to determine whether satisfaction with employment status moderated the relationship between employment and MIL. In the absence of a measure of satisfaction with employment status, satisfaction was to be determined by congruence between the current and preferred employment status indicated by participants. However, this strategy became problematic for a number of reasons. Firstly, very few participants provided answers to both questions resulting in a high proportion of missing data. Secondly, this measure of satisfaction with employment status was not a validated measure. Thirdly, it is conceivable that an individual can experience satisfaction, or at least some satisfaction, with their current employment status but still prefer another. Indeed, support for this possibility was evidenced by some participants who indicated that they would prefer another employment status but on a separate measure of job satisfaction indicated high satisfaction. These factors suggested the measure was not particularly sound. With these factors considered together, it was decided that any conclusions drawn from the analyses would be, at best, dubious.

However, although it was not possible to test the moderating role of satisfaction with employment status, it was possible to examine the relationship between job satisfaction and MIL for participants in paid employment (n = 491). Results of the hierarchical

regression are present in Table 11. Demographic variables entered at Step 1 explained 14.6% of the variance in MIL. After entering job satisfaction at Step 2, the model explained 15.6% of the total variance in MIL ($F(6, 408) = 12.61$, $p < .001$). Job satisfaction explained an additional 1.2% of the variance in MIL, this was a significant contribution (R^2 change = .012, F change (1, 408) = 5.66, $p = .018$). In the final model, significant variables were SES ($\beta = -.108$, $p = .039$), gender ($\beta = -.111$, $p = .017$), psychological health ($\beta = .236$, $p < .001$), and job satisfaction ($\beta = .117$, $p = .018$).

Table 11

Summary of Hierarchical Regression for Variables Predicting MIL among participants in paid employment.

		Model 1	Model 2	
Step	Variable	β	β	sr^2
1	SES	.128*	.108*	.009
	Gender[a]	-.117*	-.111*	.012
	Educational Level[b]	.045	.049	.002
	Physical Health (PCS)	.046	-.040	.001
	Mental Health (MCS)	.296***	.263***	.055
2	Job Satisfaction		.117*	.012
R^2		.146***	.156***	
ΔR^2			.012*	

[a] Dummy coded: 0=Female, 1=Male.
[b] Dummy coded: 0=Up to secondary, 1=Post-secondary.
*p<.05, **p<.01***p<.001

A hierarchical linear regression was carried out to determine the ability of participation in volunteering to predict MIL after controlling for demographic and health variables. Results of this regression are presented in Table 12. Entered at Step 1 were the demographic and health variables found to be significantly related to MIL in bivariate analyses: economic living standard, gender, educational level, physical health, and mental health. These variables explained 15.7% of the variation in MIL. Once entered into the multivariate model, economic living standard ($\beta = .129$, $p < .001$), gender (β = -

.077, p = .010), educational level (β = .059, p < .048) and mental health (β = .303, p < .001) were found to be significant predictors of MIL.

Volunteering was entered in Step 2. After controlling for demographic and health variables, volunteering significantly predicted MIL (β = .140, p < .001). The final model explained 17.6% of the total variance in MIL (F(6, 970) = 34.57, p < .001) with 1.9% of the variance explained by volunteering (R^2 change = .019, F change (1, 970) = 22.49, p < .001).

Table 12

Summary of Hierarchical Regression for Variables Predicting MIL

		Model 1	Model 2	
Step	Variable	β	β	sr^2
1	SES	.129***	.133***	.013
	Gender[a]	-.077**	-.063*	.004
	Educational Level[b]	.059*	.040	.002
	Physical Health (PCS)	.017	.016	.000
	Mental Health (MCS)	.303***	.303***	.073
2	Volunteering		.140***	.019
R^2		.157***	.176***	
ΔR^2			.019***	

[a] Dummy coded: 0=Female, 1=Male.
[b] Dummy coded: 0=Up to secondary, 1=Post-secondary.
*p<.05, **p<.01***p<.001

Hypothesis Five: Older adults who experience greater opportunity for nurturance will experience higher MIL

Hypothesis Six: Opportunity for nurturance will mediate the relationships between MIL and participation in employment, volunteering, and informal caregiving.

A mediation analysis using ordinary least squares path analysis and non-parametric bootstrapping following Hayes (2013) was used to investigate the hypothesis that opportunity for nurturance mediates the effect of volunteering on MIL. The variables controlled for in the mediation analysis were gender, SES, education, psychological health, and physical health as these were significantly related to MIL. As can be seen in Figure 2 and Table 13, participants who volunteered reported higher levels of opportunity for nurturance than those who did not volunteer (b_a =.055) and participants with higher levels of opportunity for nurturance reported higher levels of MIL (b_b = .253). A bias-corrected bootstrap confidence interval for the indirect effect (b_a b_b = .014) based on 10,000 bootstrap samples was entirely above zero (95% CI [.053, .0261]). Sobel's test also indicated the indirect effect was significant (z = 2.60, p = .01). The direct effect of volunteering on MIL was also significant ($b_{c'}$ =.108, p<.001). The proportion of the total effect mediated (P_M) indicated that opportunity for nurturance accounted for just over a tenth of the total effect of volunteering on MIL (P_M = .113).

Table 13

Summary of Analysis for Opportunity for Nurturance Mediating the Effect of Volunteering on MIL

		Opportunity for Nurturance				MIL		
		b^a	*SE*	*p*		*b*	*SE*	*p*
Volunteering	*a*	.055	.018	.002	*c'*	.108	.027	< .001
Opportunity for nurturance		-	-	-	*b*	.253	.048	< .001
Constant	i_1	9.47	.477	< .001	i_2	14.25	.850	< .001
		$R^2 = .048$ $F(6, 960) = 8.12$, $p < .001$				$R^2 = .194$ $F(7, 959) = 32.92$, $p < .001$		

[a] *b* = unstandardized coefficient

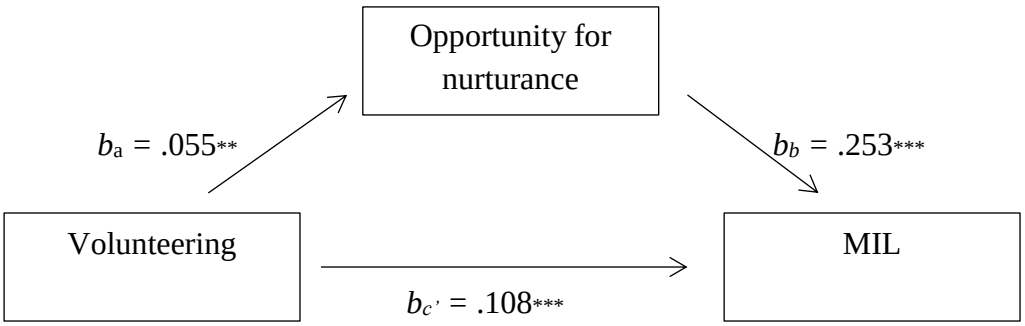


Figure 3. Mediation model for opportunity for nurturance mediating the effect of volunteering on MIL.

Although there was no evidence of a direct effect between employment and MIL, Hayes (2013) and others (Rucker, Preacher, Tormala, & Petty, 2011) demonstrate that the lack of significant direct or total effects does not preclude the possibility that significant

indirect effects may still operate. Thus, mediation analyses to test for indirect effects of employment and informal caregiving on MIL through opportunity for nurturance were carried out. The indirect effect of employment on MIL through opportunity for nurturance was not significant. As can be seen in Table 14, participants who were in paid employment did not report significantly different levels of opportunity for nurturance than those who were not in paid employment (a = -.014, p = .928). A bias-corrected bootstrap confidence interval for the indirect effect (ab = -.004) based on 10,000 bootstrap samples was not entirely above zero (95% CI [-.081, .077]). The variables controlled for in the mediation analysis were gender, SES, education, psychological health, and physical health.

Table 14

Summary of Analysis for Opportunity for Nurturance Mediating the Effect of Paid Employment on MIL

		Opportunity for Nurturance				MIL		
		b[a]	*SE*	*p*		*b*	*SE*	*p*
Employment[b]	*a*	-.014	.149	.928	*c'*	.338	.220	.124
Opportunity for nurturance		-	-	-	*b*	.259	.048	< .001
Constant	i_1	9.56	.473	< .001	i_2	14.79	.833	< .001
		R^2 = .039 $F(6, 960) = 6.45$, $p < .001$				R^2 = .181 $F(7, 959) = 30.20$, p<.001		

[a] b = unstandardized coefficient
[b] Dummy Coded: 0=Not in paid employment, 1=In paid employment

However, as can be seen in Figure 3 and Table 15, participants who were informal caregivers reported higher levels of opportunity for nurturance than those who did not provide care (b_a = 1.12) and participants with higher levels of opportunity for nurturance reported higher levels of MIL (b_b = .271). A bias-corrected bootstrap confidence interval for the indirect effect (b_a b_b = .302) based on 10,000 bootstrap samples was entirely

above zero (95% CI [.173, .468]). Sobel's test also indicated the indirect effect was significant (z = 3.87, $p < .001$). There was no evidence that caregiving influenced MIL independent of its effect on opportunity for nurturance (c' = -.078, p = .805). The partially standardised indirect effect was .089 (95% CI [.051, .138]) indicating caregivers were on average .089 standard deviations higher in their MIL scores compared to non-caregivers as a result of the indirect effect through opportunity for nurturance.

Table 15

Summary of Analysis for Opportunity for Nurturance Mediating the Effect of Informal Caregiving on MIL

		Opportunity for Nurturance				MIL		
		b[a]	*SE*	*p*		*b*	*SE*	*p*
Caregiving[b]	*a*	1.12	.205	< .001	*c'*	.078	.314	.805
Opportunity for nurturance		-	-	-	*b*	.271	.049	< .001
Constant	i_1	9.07	.475	< .001	i_2	14.20	.840	< .001
		R^2 = .066 $F(6, 970) = 11.47$, $p < .001$				R^2 = .190 $F(7, 969) = 32.31$, $p < .001$		

[a] b = unstandardized coefficient
[b] Dummy Coded: 0=Non caregiver, 1=Caregiver

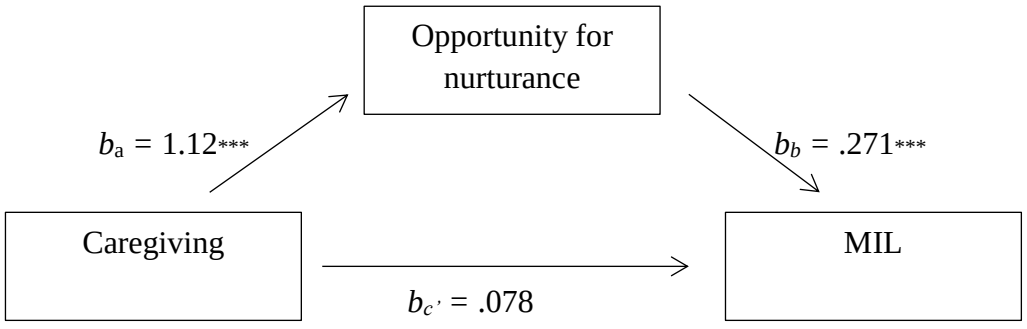


Figure 4. Mediation model for opportunity for nurturance mediating the effect of informal caregiving on MIL.

8.2 Results Part C

Part C: Predictors of MIL among older adult informal caregivers

Data Screening

Missing Data. Of the 148 participants who returned the caregiving survey, 112 had sufficient data to be considered for analysis. Missing values analysis was carried out to explore missing data. Variables with a high proportion of missing data (>5%) were SES (missing 7.9%) and Social Support (missing 15.8%), mental and physical health (each missing 12.9%), and frequency of caregiving (missing 14.9%). Little's MCAR was not significant (χ^2= 134.64, *df* = 124, *p* = .242), suggesting values are missing completely at random (MCAR). However, significance tests were carried out to determine the significance of missingness. Dummy variables were created (0 = missing, 1 = not missing) and a series of *t*-tests and chi-squared analyses were carried out. Participants with missing data on the SES variable provided a lower frequency of care (*M* = 9.88) than those with non-missing data (*M* = 27.76) and this difference was significant (*t* = -3.328, *df* = 59.09, *p* = .002). Participants with missing data on the care frequency variable carried out fewer IADLs (*M* = 1.71) than those with non-missing data (*M* = 5.48) and this difference was significant (*t* = -3.568, *df* = 99, *p* = .001). All other *t*-tests were not significant. Chi-square tests of independence were performed to examine the relation between categorical variables and missingness on mental and physical health, SES, frequency of care, and social support variables.

Although elimination (i.e. list-wise deletion) was considered appropriate for the ICC 2013 data set, a consequence of the much smaller size of the caregiver data set is that elimination methods are not ideal as the deletion of cases results in a loss of power. Thus,

multiple imputation was used to deal with missing data as it is considered the most respectable method for estimating missing data (Tabachnick & Fidell, 2013). In the multiple imputation process, twenty independent imputed data sets were created. Analyses were carried out on each independent data set and results were pooled to provide parametric statistics and beta coefficients.

Outliers. Values for all variables were within the acceptable range. However, five participants provided care only very infrequently (once every few months or less often). As these participants were considered outside of the target population, they were removed from further analyses. Four participants were caregivers of children and, as research suggests that the outcomes for older adult caregivers of children differ to older adult caregivers of adults (Strawbridge, Wallhagen, Shema, & Kaplan, 1997), these participants were removed from further analyses.

Univariate Outliers. For continuous variables, cases are considered potential univariate outliers when *z* scores are very large, usually in excess of 3.29 ($p < .001$, two tailed; Tabachnick & Fidell, 2013). At this threshold, two cases on the MIL variable and one case on the Social Provisions variable were outliers with very low scores. Although the scores were in the acceptable range for the variable, examination of histograms indicated they were detached from the distribution so these cases were removed from further analyses. Two cases on the duration variable and one case on the negative impact scale were outliers with very high scores. However, after transformations were applied to these variables (described below), these cases were no longer outliers.

Multivariate Outliers. Multivariate outliers were detected using Mahalanobis Distance. Mahalanobis values were evaluated using the χ^2 distribution with alpha set at the conservative level of .001. One multivariate outlier was identified using this method. Analyses were run with and without the outlier. As outcomes were the same, outlier was retained for added power**.**

Assumptions of Multivariate Analysis

*Normality***.** Normality was assessed using histograms, skewness and kurtosis values, expected normal probability plots, and detrended expected normal probability plots. The distribution of data for the care duration and the negative impact scale both demonstrated substantial positive skew. Log transformations were applied to improve the normality of these distributions.

Linearity, Homoscedasticity, and Multicollinearity. Assessment of these assumptions was conducted as described above in Section 8.1 and indicated these assumptions were satisfied.

Descriptive Statistics

Data screening procedures resulted in a final sample of 101. Demographic characteristics of the sample are presented in Table 16. Consistent with data based on the New Zealand 2013 Census (Grimmond, 2014), females outnumbered males. However the difference (19%) was not as high as that reported by Grimmond (26%). The majority of participants were New Zealand European (68.3%) followed by Māori (23.8%). Again, based on 2013 census data, Grimmond reported a slightly higher proportion of New Zealand European caregivers (78.6%) and fewer Māori (14.1%). The higher proportion of Māori in the

current sample may be due to the oversampling of Māori in the initial HWR study. The majority of participants had a comfortable (33.7%) or good (39.6%) economic living standard and were married (58.4%).

Table 16

Demographic Characteristics of Caregiving Sample

	Range	**Mean (SD)**
Age	61-77	67.98 (5.03)
		Frequency (%)
Gender		
	Female	70 (69.3)
	Male	31 (30.7)
Ethnicity		
	NZ European	69 (68.3)
	Māori	24 (23.8)
	Pacific Islander	3 (3.0)
	Asian	0 (0.0)
	Other	4 (4.0)
	Missing	1 (1.0)
Educational Level		
	No Qualifications	28 (27.7)
	Secondary School	21 (20.8)
	Post-Secondary	33 (32.7)
	University	18 (17.8)
	Missing	1 (1.0)
Relationship Status		
	Married	59 (58.4)
	Civil Union/de facto/partnered	1 (.0)
	Divorced/ separated	11 (10.9)
	Widow/widower	22 (21.8)
	Single/Never Married	7 (6.9)
	Missing	1 (1.0)
Economic Living Standard		
	Hardship	19 (18.8)
	Comfortable	34 (33.7)
	Good	40 (39.6)
	Missing	8 (7.9)

Descriptive statistics for outcome variables are presented in Table 17. The mean MIL score (*M* = 25.17) aligned with that found in the full ICC 2013 sample (*M* = 25.11). The mean scores on the Negative Impact (*M* = 11.62) and Positive Value (*M* = 13.28) subscales were similar to those found in previous research (11.89 and 13.45 respectively; Balducci et al., 2008). The mean score on Social Provisions Scale (i.e. perceived social support; *M* = 77.98) was similar to that found in previous research with older adults (*M* = 76.9; Cutrona et al., 1986).

Table 17

Descriptive Statistics for Predictor and Outcome Variables

	Mean	*SD*
Meaning in Life	25.17	3.46
Subjective Factors		
Negative impact	11.62	3.90
Positive value	13.28	2.31
Perceived Social Support	77.98	9.72
Objective Factors		
Duration of care (years)	8.00	9.49
Frequency of care (hours per week)	26.09	39.12
Extent of care (number of IADLs)	5.12	3.36
Extent of care (number of ADLs)	2.23	2.82
	Frequency	%
Care Relationship		
Spouse	40	39.6
Other relative	41	40.6
Non-relative	20	19.8
Co-Residence		
Yes	43	42.6
No	48	47.5
Missing	10	9.9

Bivariate Analyses

Bivariate analyses including *t*-tests, ANOVA, and Person's product moment correlations, were carried out to test the relationships between meaning in life, control variables, and predictor variables. The results of bivariate analyses between control

variables and MIL are presented in Table 18. Only SES, educational level, physical health, and mental health were significantly related to MIL. The remaining variables were not included in multivariate analyses.

Table 18

Results of Bivariate Analyses between Control Variables and MIL

	r	*p*
Age	-.045	.659
SES	.413	<.001
Mental Health	.317	.003
Physical Health	.431	<.001
	t	*p*
Gender	-.288	.774
Relationship Status	-1.19	.236
Educational Level	-2.22	.028
Employment Status	-1.19	.235
	F	*p*
Ethnicity	.982	.378

Results of bivariate analyses between MIL and predictor variables are presented in Table 19. Only care duration and perceived social support were significantly related to MIL. Other variables were not significantly related to MIL and were removed from further analyses.

Table 19

Results of Bivariate Analyses between MIL and Predictor Variables

	r	*p*
Subjective Factors		
Negative Impact	-.164	.111
Positive value	.165	.108
Perceived Social Support	.438	<.001
Objective Factors		
Duration of care (years)	.221	.028
Frequency of care (hours/week)	.121	.269
Extent of care (number IADLs)	.069	.493
Extent of care (number ADLs)	.088	.384
	F	*p*
Care Relationship	2.13	.125
	t	*p*
Co-Residence	-.203	.839

Multivariate Analyses

Hypothesis Seven: MIL will be positively associated with psychological health among older adult informal caregivers.

Hypothesis Eight: MIL will be positively associated with physical health among older adult informal caregivers.

Hypothesis Nine: Subjective aspects of caregiving will be significantly associated with MIL and, specifically, negative appraisals will be negatively associated with MIL while positive appraisals and social support will be positively associated with MIL. Social support will be the strongest predictor of MIL.

Hypothesis Ten: Objective aspects of caregiving will not be significantly associated with MIL with the exception of care duration which will be positively associated with MIL.

Except where indicated, all reported regression coefficients are standardised (β = standardised coefficient).

A hierarchical linear regression was carried out to determine which variables predicted MIL after controlling for demographic variables. Results of the hierarchical regression are displayed in Table 20. Entered at Step 1 were the demographic variables found to be significant predictors of MIL in bivariate analyses: physical health, mental health, economic living standard, and educational level. These variables explained 23.1% of the variance in MIL. The objective factor significantly related to MIL in bivariate analyses, duration of caregiving, was entered at Step 2 and explained an additional 3.1% of variance in MIL, this was not a significant contribution to MIL (R^2 change = .031, F change (1, 64) = 2.66, p = .108). After controlling for relationship status and economic living standard, and duration of caregiving, an additional 4.8% of the variance MIL was explained by perceived social support, this was a significant contribution to MIL (R^2 change = .048, F change (1, 63) = 4.35, p = .041). In the final model, significant variables were mental health (β = .236, p = .047) and perceived social support (β = .232, p =.041). SES, educational level, physical health, and caregiving duration were not significant contributors.

Table 20

Summary of Hierarchical Regression for Aspects of Caregiving Predicting MIL

		Model 1	Model 2	Model 3	
Step	Variable	β	β	β	sr^2
1	SES	.199	.219	.211	.032
	Educational Level[a]	.042	.011	-.001	.000
	Physical Health	.110	.093	.072	.004
	Mental Health	.304*	.275*	.236	.045
2	Caregiving Duration		.181	.138	.017
3	Social Support			.232*	.048
R^2		.231**	.261**	.309**	
ΔR^2			.031	.048*	

[a] Dummy coded: 0=Up to Secondary, 1=Post-secondary Qualifications.

* $p<.05$, ** $p<.01$

Chapter 9: Discussion

9.1 Overview

As the population of Aotearoa New Zealand continues to age, maintaining and enhancing the health and well-being of older adults has become increasingly important. Many resources have been devoted to meeting the physical, social and economic needs of older adults as a means of enhancing well-being, with successful and positive results. However, relatively little attention has been given to examining and meeting the existential needs, such as a sense of meaning in life, of older adults despite growing evidence of the importance of meaning for psychological and physical well-being.

MIL is a multidimensional construct consisting of cognitive (coherence), motivational (purpose), and evaluative (significance) components. It has been defined as "the web of connections, interpretations, aspirations, and evaluations that (1) make our experiences comprehensible, (2) direct our efforts toward desired futures, and (3) provide a sense that our lives matter and are worthwhile" (Martela & Steger, 2016, p. 538). Theories of MIL converge to agree that possessing a sense of MIL is important for well-being. This proposition has been supported by empirical research and the relationship between MIL and well-being among the population in general and older adults specifically has been well-established. The growing evidence for this relationship provides increasing support for the need to better understand how MIL arises and factors which may enhance or erode a sense of meaning among older adults.

While previous research has identified a number of important sources of MIL, relatively little research has focused on older adults specifically. When examining the question of sources of MIL among older adults, it is important to consider the socio-historical

context in which older adulthood is lived out. Older adults today are living and working longer, are better educated, and are in better health than in any time in history yet the prevalence of chronic disease is also at a higher rate than ever before. Increased longevity, declines in fertility rates, and the movement of large birth cohorts of the mid-1900's into older adulthood, has seen the ageing of the population and the shrinking of the workforce. Due to such social and demographic changes, an increasing proportion of older adults are working in paid employment, volunteer roles, or as informal caregivers. Given these changes in older adult activity, it is important to consider the relationships between participation in these activities and a sense of MIL among older adults.

The current research investigated the relationships between possessing a sense of MIL and physical and psychological health; MIL and participation in employment and volunteering; and the role of social support in these relationships in a large sample of older adults in Aotearoa New Zealand. The current research also examined predictors of MIL among a smaller sub-sample of older adults who identified as informal caregivers. The specific research questions addressed were:

(1) Is MIL associated with physical and psychological health among older adults in Aotearoa New Zealand?
(2) Is participation in in employment, volunteering, and informal caregiving associated with MIL among older adults and to what extent?
(3) Does providing social support mediate the relationship between MIL and participation in employment, volunteering, and informal care?
(4) Are there aspects of caregiving which determine why some caregivers experience more MIL than others?

This chapter will discuss the results from the study and integrate the findings with existing research and theory. Contributions and limitations of the study will be considered and implications and areas for further research will be discussed.

9.2 MIL and Relationship to Demographic Variables

Overall, MIL scores were slightly lower than those found in previous research (Krause, 2009). This might be due in part to the younger age of participants in the current study where the mean age was ten years below the mean age of participants in Krause's (2009) study. Previous research suggests MIL does increases with age (Battersby & Phillips, 2016; Littman-Ovadia & Steger, 2010; Reker & Fry, 2003; Steger, Oishi, & Kashdan, 2009). Another difference in samples that may account, in part, for the differences in MIL is that all of Krause's participants were retired whereas the current study included retired, semi-retired, and non-retired older adults. There is no previous research to compare MIL levels with other age groups in Aotearoa New Zealand.

Gender, SES, and educational level differences in MIL were found. Females had higher MIL than males but the effect size was small. This is largely consistent with previous research finding significant but negligible gender differences in MIL (Schnell, 2009) or no gender differences (Debats, 1999; Hofer et al., 2014). The difference in MIL as identified in the current study may be related to the gender differences in the importance of sources of MIL. Sources of meaning have been found to differ by gender with women placing more emphasis on relationships and religiosity/spirituality while self-actualisation was more important for men (Schnell, 2009). It is possible that these different sources become more or less readily available in older adulthood, accounting

for the gender difference in MIL. For example, physical and cognitive declines and movement out of employment may result in decreased opportunities for self-actualisation and so a decline in MIL for men, for whom this is a more important source of MIL relative to women. Similarly, as Pinquart (2002) argues, a higher proportion of older men compared to older women were in the workforce thus he proposes that men are more likely to experience discontinuity in purpose, and therefore MIL, in older adulthood as they move into retirement.

Consistent with previous research (Kulik, Shilo-Levin, & Liberman, 2017), SES was significantly positively associated with MIL and participants with post-secondary qualifications had, on average, higher MIL than those with up to secondary level qualifications. These variables are closely related; those with higher SES often also have a higher level of education (Sirin, 2005). The difference in MIL for these demographic variables may be due to the greater opportunities generally available to those with high SES and higher educational levels. Greater financial resources increase the range of activities an individual can participate in, activities which may foster meaning. In contrast, those with lower SES and/or education may face more barriers in their pursuit of meaningful goals. Furthermore, the more resources an individual has, the greater capacity they have for independence and giving back to others, potentially relieving feelings of burdensomeness and increasing feelings of significance (Pinquart, 2002). However, as with gender, the effect sizes of the relationships were small and it is questionable whether these differences are of any practical relevance. Indeed, educational level was no longer significant when entered into the multivariate model and results indicate that an individual one standard deviation (5.86 units) higher on the $ELSI_{SF}$ Scale can expect to be only half a unit higher on the MIL scale.

Age, relationship status, and ethnicity were not significant predictors of MIL. While previous research has demonstrated an increase in MIL with age, the age range in the current study might be too narrow for any substantial changes in MIL to occur. Given the importance of relationships to MIL as identified in previous research, the finding that relationship status was not related to MIL might seem surprising. However, in an examination of specific types of interpersonal relationships, Stavrova and Luhmann (2016) found collective connectedness (belonging to a larger community) to be a more important source of MIL than intimate connections (i.e. spouse or romantic partner). Thus, that relationship status and MIL were not related is consistent with previous research. Finally, in regards to ethnicity, previous research has also found no relationship between MIL and ethnicity (Bar-Tur et al., 2001). The current research suggests this pattern also occurs in an Aotearoa New Zealand context, at least among older adults. It would appear that New Zealand Europeans/Pākehā, Māori, and individuals of other ethnic groups all experience similar levels of MIL.

Overall, the small or absent relationships suggest that MIL is fairly independent of demographic factors; older adults in Aotearoa New Zealand experience similar levels of meaning regardless of gender, SES, educational level, ethnicity, or relationship status. This lends support to Frankl's (1959) proposition that meaning is a universal motivator and meaning can be found regardless of an individual's life circumstances.

9.3 Part A: Replication of past research on the health benefits associated with MIL.

Analyses in Part A addressed the first research question. Data was used from the 2013 wave of the HWR to attempt to replicate previous research which has found significant positive relationships between MIL and psychological and physical health. Although previous research has investigated the relationship between MIL and health outcomes, this analysis was included in the current research for several reasons. Firstly, the only such research carried out with older adults in Aotearoa New Zealand consisted of a sample which was small and could not be considered representative. Secondly, previous research has not included important control variables which may explain some of the variation in health outcomes. Finally, the relationship between MIL and health was examined to supplement the additional analyses carried out in the study as it would be of little value to find how MIL might be influenced if possessing a sense of MIL was not associated with important outcomes for older adults.

MIL and Psychological Health

Hypothesis one, that MIL would be positively associated with psychological health, was supported. This finding is consistent with the leading theories on MIL all of which posit, directly or indirectly, that experiencing life as meaningful is important for an individual's psychological well-being (Battista & Almond, 1973; Baumeister, 1991; Erikson, 1980; Frankl, 1959; Pyszczynsi et al., 2004; Yalom, 1980).

This finding is also consistent with the large body of previous research on the psychological implications of MIL (Haugan, 2014; Heisel & Flett, 2016; Oishi & Kashdan, 2009; Pinquart, 2002; Zika & Chamberlain, 1992) and confirms this

relationship also exists among older adults in Aotearoa New Zealand. Results from the current study build on those reported by Zika and Chamberlain (1992) who found a moderate to strong relationship between MIL and mental health among older adults in Aotearoa New Zealand. However, their sample was small and unrepresentative and they did not control for potentially confounding variables. In the current study, inclusion of control variables found to be significantly related to psychological health (SES, relationship status, and ethnicity) demonstrates that MIL remains a significant predictor of psychological health after controlling for these variables. However, MIL accounted for 8.1% of the variation in psychological health after control variables had been entered into the model. This proportion is smaller than those in previous research (e.g. Battersby & Phillips, 2016; Zika & Chamberlain, 1992) and suggests the stronger relationships reported in previous research may be exaggerated due to the lack of control variables.

As the study was cross-sectional, causal conclusions cannot be made. The relationship observed may work in the opposite direction or be bi-directional with good psychological health facilitating the search and discovery of MIL and the experience of MIL fostering psychological health. This possibility is supported by research on meaning sources where participants cite health as one of the key sources of meaning (Ebersole, 1998; Takkinen & Ruoppila, 2001).

MIL and Physical Health

The relationship between MIL and physical health had not previously been examined in an Aotearoa New Zealand context. Hypothesis Two, that MIL would be positively associated with physical health among older adults, was not supported; in a multivariate model, the relationship between MIL and physical health was not significant. A possible

explanation for this finding is that MIL might convey some advantage in regards to physical health, for example by encouraging health enhancing behaviours and attitudes (Homan & Boyatzis, 2010) or more indirectly by strengthening immune functioning (Ryff & Singer, 1998), yet the advantage might not be enough to offset the multiple declines in physical health which frequently accompany aging. While this explanation may seem feasible it does not account for the differences between the current research and previous research where MIL was found to be significantly and positively related to physical health among older adults (Krause, 2004, 2009a; Park, Malone, Suresh, Bliss, & Rosen, 2008; Smith & Zautra, 2004).

The differences in outcome measures and health status of the participants may account for the differing findings. In previous research, MIL has been found to be positively associated with physical health among older adults recovering from knee surgery (Smith & Zautra, 2004) and older adults with congestive heart failure (Park et al., 2008). Participants in these studies had very specific chronic or acute physical health conditions and, in Smith and Zautra's (2004) study, physical health was measured in terms of factors indicating recovery from surgery. It may be that, in the presence of such conditions or in the recovery process, MIL is an important determinant of physical health outcomes. In contrast, for the general maintenance of one's overall physical health, MIL may be less influential in determining outcomes. It is also possible that, in the case of serious chronic or acute conditions, the relationship works in the opposite direction whereby having a serious acute or chronic health condition may encourage re-evaluation of one's life and movement towards the perception of one's life as more meaningful.

A further possible explanation for the differential findings between the current study and existing research relates to the control variables which were used. Smith and Zautra (2004) found the relationship between MIL and physical health outcomes was no longer significant when personality variables (optimism, pessimism, and emotionality) were controlled for. Findings of the current research are consistent with Smith and Zautra whereby, although a positive relationship between MIL and physical health was found in bivariate analyses, after controlling for demographic variables in a multi-variate model, the relationship between MIL and physical health was no longer significant. This suggests other variables entered into the model are more important predictors of physical health than MIL. The findings of the current research would suggest SES is one such important variable. Indeed, a consistent pattern in previous research demonstrating a link between MIL and self-rated physical health among older adults (Krause, 2004; Krause, 2009; Park et al., 2008; Smith & Zautra, 2004) is that SES has not been controlled for. This is despite extensive evidence for SES inequalities in health (Siegrist & Marmot, 2006). Such SES health inequalities are also evident in an Aotearoa New Zealand context (National Health Committee, 1998). Thus, the inclusion of control variables, namely SES, may account for differences between the current study and previous research.

Part A Summary

The findings suggest MIL is an important resource for the psychological health of older adults in Aotearoa New Zealand. Variation in MIL uniquely explained some of the variation in psychological health even after controlling for potentially confounding variables. In contrast, the research suggests MIL does not convey any advantage in terms of self-rated physical health for this population. It is possible that possessing MIL

is not enough to offset the multiple declines in physical health which accompany aging. The findings also indicate the importance of controlling for SES in future research examining MIL and health as the failure to do so may result in inaccurate findings.

9.4 Part B: Examination of relationships between MIL, employment, volunteering, informal caregiving, and social support.

Analyses in Part B addressed the second and third research questions. Data was used from the 2013 and 2014 waves of the HWR study to examine whether older adults' participation in paid employment and volunteering contributed to a sense of MIL. Furthermore, the potential role of social support provision in these relationships was investigated. Previous research has examined meaning in relation to work though most of this research has been carried out with participants of the traditional working age range (i.e. early 20's to 65) rather than older adults and has examined *meaning in work*, a situational meaning, rather than MIL. There does not appear to be previous research comparing levels of MIL among older adults in paid employment and those not in paid employment. Similarly, previous research has examined MIL among volunteers compared to non-volunteers yet older adults are largely under-represented. Additionally, the potential mediating role of social support, and specifically provision of support, in these relationships not appear to have been empirically examined.

MIL and Employment

Hypothesis Three, that participants in paid employment would have higher MIL than participants who were not in paid employment, was not supported. Even before controlling for demographic variables, MIL was not significantly associated with

employment. The hypothesis was proposed based on a number of reasons as related to the three dimensions of meaning (coherence, purpose, and significance) and previous research on sources of meaning. It was suggested employment could afford order and structure (coherence) and reason and direction for action and living out values (purpose). Furthermore, the contribution made to society and the personal achievements in the employment role have the potential to foster a sense one's life is worthwhile (significance). Employment also provides a valued social role (significance) and access to interpersonal relationships and social support, which have been found to enhance MIL among older adults. Through providing opportunities for challenge, personal growth, achievement, and creativity, employment is also an avenue for self-actualisation as well as self-transcendence, especially in the form of generativity, through contributing to a larger cause and giving back to the next generation. It was proposed that, through such mechanisms, employment may enhance MIL among older adults.

While employment may indeed involve these mechanisms, it may be that older adults experience these mechanisms more strongly, readily, or consistently through other roles and activities. For example, generativity and purpose may be experienced through volunteer activities; significance may be fostered more through grand-parenting; self-actualisation through leisure activities; or self-transcendence through involvement in social or political causes/movements. Conversely, it is possible some of these mechanisms themselves are not as important for older adults' sense of MIL as are other mechanisms. For example, employment may provide many opportunities for self-actualisation (through achievement, personal growth, and challenges) yet well-being and relatedness may be more important for developing a sense of MIL for older adults (Takkinen & Ruoppila, 2001). Although no significant relationship was found, this does

not preclude the possibility that employment contributes to MIL among older adults, only that it does not convey any advantage over and above older adults who are not in paid employment.

A further explanation for the non-significant finding is that the relationships between paid employment and MIL are highly complex and analyses in the current study were not nuanced enough to identify such relationships. For example, it must be considered that jobs will vary in the opportunities they present for generativity, achievement, social support, and self-transcendence and other such pathways to meaning. Thus, the specific type of job is a variable which may play a role in whether employment enhances MIL. Additional individual characteristics (e.g., motivation to work, attitude to work, engagement), other job characteristics (e.g., job design, work-role fit), and organisational factors (e.g., organisational values) are all likely to influence whether an individual's participation in paid employment enhances their MIL. *Meaning in work* research has identified a range of variables which determine whether an individual finds meaning in their work and it is likely to be similar for whether an individual experiences MIL through their employment. Unfortunately, as is a limitation of secondary analysis, such variables were not assessed in the HWR study so it was not possible to examine more complex models of the relationships between employment and MIL in the current study. As the findings for job satisfaction (discussed below) suggest, this relationship needs to be explored in further research which includes additional variables in more complex models than the straightforward association which was tested in the current study.

For a number of reasons, it was deemed inappropriate to carry out moderation analyses to test whether satisfaction with employment status moderated the effect of paid employment on MIL. However, analyses did reveal that, for participants in paid employment, those with higher job satisfaction experienced higher MIL. This is consistent with previous research which has found positive correlations between role satisfaction and MIL (Kulik et al., 2017) and between job satisfaction and the situational meaning of meaning in work (Duffy, Autin, & Bott, 2015; Steger, Dik, & Duffy, 2012). Satisfaction when carrying one's work role may provide a sense of fulfilment, purpose, and thus MIL.

MIL and Volunteering

Hypothesis Four, that participation in volunteer activities would be associated with higher levels of MIL and that this relationship would be stronger than the relationship between employment and MIL, was supported and these findings are consistent with previous research (Schnell & Hoof, 2012; Southwick, Gilmartin, McDonough, & Morrissey, 2006). It can be argued that volunteering provides order and structure (coherence), and reason and direction for action and living out values (purpose). Furthermore, the contribution made to society and the personal achievements in the volunteer role have the potential to foster a sense that one's life is worthwhile (significance) and provides a valued social role (significance) and an avenue to social support. However, as discussed above, these same arguments can be made in regards to employment, yet employment was not significantly related to MIL. Thus, when considering why volunteering is associated with greater MIL, it is important to consider how the volunteering role differs from that of paid employment.

First, compared to paid employment, the volunteer role is more likely to have been sought out and chosen by the individual and so there is greater likelihood of consistency between core beliefs and the individual's life situation and actions. Consequently, volunteering is more likely to align with an individual's core values and, as discussed, finding and enacting values and beliefs is important for the development of meaning. While paid employment may also be sought out and chosen, it also generally comprises an element of necessity as basic needs must be provided for. Furthermore, over years of paid employment, individuals are likely to face many barriers which reduce the freedom to choose their career trajectories. Such barriers may include, for example, lack of social or economic resources needed to secure the education needed for their desired job or work place discrimination based on gender, ethnicity, social status, or other factors (Duffy, Autin, & Bott, 2015). That is, in paid employment, there is much less freedom to choose; less freedom to choose to be employed or not and less freedom to choose the nature of that employment. Indeed, theorists have suggested that autonomy and the individual's freedom to choose are conducive to meaning development (Antonovsky, 1979; Weinstein, Ryan, & Deci, 2012). Thus, volunteering, as a role in which there is much more freedom of choice and more control over the direction one moves in, is more likely to align with the core values of the individual and so contribute to MIL.

Second, the volunteer role is more likely to allow for self-transcendence. As discussed, sources of MIL that go beyond self-interests (i.e. self-transcendence) are associated with greater MIL than sources of meaning which are more self-focused (Schnell, 2011) and this relationship is particularly the case for older adults (Bar-Tur et al., 2001; Grouden & Jose, 2014). Although employment can also involve expereinces of self-transcendence, volunteering may more readily facilitate such experiences by its very

nature: one's time, skills, resources are freely given rather than exchanged for pay as in employment. Indeed, the primary reasons older adults give for volunteering are self-transcendent in focus (e.g. helping others, contributing to a cause they believe in) compared to younger adults who are more likely to identify individualistic motivations for volunteering (e.g. to gain experience; Chappell & Prince, 1997; Konrath et al., 2012). By more readily facilitating self-transcendence, volunteering may convey an advantage which employment does not in terms of enhancing MIL among older adults.

The finding that volunteering was significantly associated with MIL while employment was not is consistent with theories of ageing which emphasise motivational changes in older adulthood. Socio-emotional Selectivity theory posits older adults undergo a motivational shift, from personal development and achievement to emotionally meaningful goals with more value placed on emotional satisfaction. Goals which are future oriented (e.g. knowledge acquisition, career planning, developing and building social networks) become less valued while emotion related goals (e.g. emotionally gratifying interactions) are favoured (Carstensen, 1992). Tornstam's (1997) theory of gerotranscendence proposes a similar shift occurs as people grow older. This shift is characterised by a decreased valuing of the pragmatic and materialistic to an increase valuing of the transcendent as well as a desire for less but more meaningful interpersonal relationships. The motivational shifts proposed in such theories of ageing suggest a change in the meaning system and specifically in the purposeful/motivational dimension which consists of core valued goals and aims. Following the above discussions considering the nature of employment and volunteering, it can be seen that the volunteering role may be better align with such a meaning system that orients

towards self-transcendence when compared to employment which may be more conducive to self-acutalisation.

An alternate explanation for why volunteering was associated with higher MIL while employment was not potentially relates to the dimensions of MIL. It may be the case that, for older adults, experiences of significance and coherence are more important for overall MIL than purpose/motivation. As observed by Steger, Oishi, and Kashdan (2009), previous research has generally found older adults have higher MIL than younger adults. However, this pattern is reversed when the measure used to assess MIL emphasises the purposeful dimension of MIL. This suggests the purpose dimension of MIL may be less important for an overall sense of meaning among older adults. This would be consistent with the Selective Optimisation with Compensation (Baltes & Baltes, 1990) and Socio-emotional Selectivity (Cartensen, 1992) theories of aging which propose that the number of goals pursued declines in older age. Previous research has also found that the number of goals pursued is lower among older adults compared to younger adults (Lawton, Moss, Winter, & Hoffman, 2002). If the purposeful dimension is less important for MIL among older adults, this may account for the differential findings between employment and volunteering whereby employment may contribute more to the purpose dimension of meaning, while volunteering may contribute more to the significance and/or coherence dimensions and so be more influential for overall MIL among older adults.

It is important to note that, although volunteering was found to predict MIL after demographic variables were controlled for, volunteering only accounted for a small proportion (1.9%) of the variation in MIL while mental health explained the largest

proportion (7.3%) and the overall model explained 17.6%. However, this is to be expected, as older adults have multiple other commiments, roles, and experiences such as familial relationships and leisure activities which also contribute to MIL. Of the multiple determinants of MIL, volunteering is only one. Thus, that the model only explained a small proportion of the variation in MIL is not unexpected but the small percentage explained by volunteering suggests other variables are more important predictors of MIL. Previous research would suggest such predictors are likely to include religion and interpersonal relationships (Krause, 2012).

Finally, again, the study was cross-sectional. It is possible the relationship is bidirectional or occurs in the opposite direction: that those who have higher sense of MIL, who perceive order and coherence in the world, see their lives as worthwhile, and have a life purpose and goals, are more likely to volunteer than those who do not.

Informal Caregiving and MIL

The exploratory research question was concerned with whether older adults who identified as informal caregivers experienced higher levels of MIL compared to older adults who did not. There was no significant difference in MIL between these groups. Although there was no evidence that caregiving conveyed any direct advantage in terms of MIL, it is important to note that the reverse is also true; there was no evidence that caregiving directly negatively impacted MIL among older adults. Furthermore, while no direct effect was found, mediation analysis demonstrated an indirect effect of caregiving on MIL. The results of this analysis are discussed below.

Opportunity for nurturance as a mediator

Hypothesis Five, that provision of social support, specifically, opportunity for nurturance, would mediate the relationship between employment, volunteering, caregiving and MIL, was partially supported. Opportunity for nurturance mediated the relationship between volunteering and MIL; informal caregiving was found to have an indirect effect on MIL through opportunity for nurturance; and no significant indirect relationship between employment and MIL was found.

In support of Hypothesis Six, opportunity for nurturance mediated the relationship between volunteering and MIL. Previous researchers have suggested or empirically demonstrated the relationship between volunteering and meaning (Andersson & Öhlén, 2005; Chippendale & Boltz, 2015; Schnell & Hoof, 2012) but have not gone further to identify the pathways through which volunteering exerts this effect on meaning. Other theorists have proposed potential mechanisms by which volunteering increases MIL, such as new connections, new competencies, and a valued role (Southwick et al., 2006), but such proposed mechanisms are vague and do not fully explicate how volunteering contributes to MIL. The current research demonstrates that opportunity for nurturance, that is, perceptions of oneself as responsible for the well-being of others, is one of the pathways through which the activity of volunteering impacts MIL. Thus, volunteering may maintain or enhance MIL as it allows an individual to provide social support for others, enabling perceptions that one is needed, important, and responsible for the well-being of others. It is possible such perceptions buffer against feelings of burdensomeness which have been found to erode MIL among older adults (Van Orden et al., 2012).

While there was no evidence that caregiving influenced MIL independent of its effect on the individual's perceptions of being responsible for others, there was evidence for an indirect effect of caregiving on MIL. Specifically, informal caregivers, relative to non-caregivers, reported, on average, higher MIL as a result of the effect of caregiving on perceptions of opportunity for nurturance which, in turn, affected MIL. The finding that caregiving enhances MIL through its effect on perceptions is consistent with previous research which has found that subjective appraisals are important predictors of finding meaning in caregiving (Quinn, Clare, & Woods, 2012). While the research by Quinn et al. (2012) focused on meaning in caregiving (i.e. situational meaning), the findings of the current research suggest subjective appraisals also play a role in predicting a more global sense of MIL among caregivers. This consistency is not unexpected given the interconnection of situational and global meaning.

In contrast to caregiving and volunteering, there was no significant indirect or direct effect of employment on MIL through opportunity for nurturance. Although employment allows the individual to provide support to others, either directly or indirectly, the particular dimension of giving support examined in the current research (i.e. sense of being needed and responsible for the well-being of others) is likely not as acute as in a caregiving situation where the role, by definition, is oriented towards ensuring the well-being of another. It is likely a caregiver is more acutely aware of the necessity of their support for the well-being of the care. This may be particularly so when, as is often the case, the caregiver perceives that there is no one else to fill the role (Abramson, 2015; Egdell, 2013; Walker et al., 1990). Similarly, it may be argued that volunteering is often more oriented towards providing for others and, as mentioned, the

primary reasons older adults give for volunteering are more likely to be other-oriented. Thus, it is conceivable that caregiving and volunteering, are, on average, more likely to enhance opportunities to provide support than is employment.

The finding that opportunity for nurturance was significantly associated with MIL provides empirical evidence in support of Weiss' (1974) Social Provisions Theory whereby Weiss proposed that lack of an opportunity to provide nurturance would be associated with a sense of existential meaninglessness. While previous research has provided evidence that receiving social support is associated with greater MIL, the current study provides new understanding by demonstrating that giving social support is also associated with a deeper sense of MIL when it involves opportunity for nurturance. This finding not only contributes new understanding to MIL research but also contributes to the growing body of social support research which demonstrates the benefits associated with providing support for others. Previous research has emphasised the importance of interpersonal relationships as a source of MIL for older adults. However, the current research suggests it is not just relationships themselves that are important to older adults but the opportunity to provide support to others within those relationships. This finding does not disqualify the importance of receiving social support for MIL (Krause, 2007) nor suggest that giving support is more important than receiving, only that giving support does indeed foster MIL. An important implication of this finding is that it demonstrates a further pathway by which meaning can be enhanced in older adults: not just through ensuring adequate social support is received but by also finding opportunities to give support to others.

Previously, theorists have speculated as to why interpersonal relationships and social support are an important source of meaning for older adults. It has been suggested that finding MIL is difficult, requiring introspection, persistence, and consideration of abstract issues and close trusted others can help with this process (Krause, 2012). Adams, Mosher, Cannady, Lucette, and Kim (2014) similarly propose that interpersonal relationships foster meaning by providing a space to talk about and, in turn, process existential concerns. These explanations suggest that interpersonal relationships enable *coherence*. Krause also suggested that receiving support helps older adults feel they belong, are valued, and are esteemed. Similarly, Williams (2001) proposed that social exclusion makes it easier for an individual to perceive of a world that functions well in their absence which reduces the sense they matter which in turn reduces meaning. These arguments appeal to the *significance* dimension of MIL. The current research provides empirical evidence that interpersonal relationships do indeed operate to enhance MIL by increasing perceptions that an individual is important and needed by another. That is, as proposed by Krause, interpersonal relationships do enable *significance*.

Part B Summary

The findings indicate that older adults in Aotearoa New Zealand who are in paid employment do not experience more or less MIL than those who are not in paid employment. In contrast, those who participate in volunteer activities experience more MIL than those who do not volunteer. Furthermore, a higher frequency of volunteer work is associated with more MIL. When considering the nature of employment compared to volunteering, it can be seen that these findings converge with previous research demonstrating the greater importance of self-transcendent activities and relationships for MIL among older adults. The findings are also consistent with various

theories of aging which outline the motivational shift that often occurs in older adulthood. Volunteering, however, explained only a small proportion of variation in MIL suggesting that other sources are more influential in terms of maintaining and enhancing MIL.

In support of Weiss' (1974) Social Provisions theory, the giving of social support was associated with higher MIL. This finding also converges with previous research, demonstrating yet another benefit of giving support. Furthermore, providing support or, more specifically, perceptions of oneself as responsible for the well-being of others, was found to be one of the pathways through which volunteering has an effect on MIL.

9.5 Part C: Predictors of MIL among older adult informal caregivers

Analyses in Part C addressed the fourth research question. Data was used from the 2013 HWR study Caregiver Supplement Survey to examine variables predicting MIL among older adults who identified as informal caregivers. Previous research has examined meaning in caregiving with meaning generally conceptualised as a coping mechanism. This research suggests that subjective factors rather than objective indicators are more important predictors of meaning in caregiving. However, there does not appear to be research examining the relationship between caregiving and the construct of MIL. Furthermore, to date, the majority of caregiving research has focused on caregivers who care for older adults rather than caregivers who are themselves older adults. The current research sought to identify factors important for predicting MIL among older adults who identified as informal caregivers. Firstly, however, the relationship between MIL and caregivers' psychological and physical health was examined. The reason for this

was to supplement the additional analyses as it would be of little value to find how MIL might be influenced if possessing a sense of MIL was not associated with important outcomes for older adult caregivers.

Caregiving, Health, and Meaning

As hypothesised (Hypothesis Seven), and as with the general sample, MIL was positively associated with psychological health after controlling for possible confounding variables. Hypothesis Eight was also supported, unlike the general sample MIL was positively associated with physical health after controlling for possible confounding variables. It is possible MIL is associated with better physical health among caregivers but not in the general sample due to the differential determinants of physical health between these two populations. For example, stress is a salient determinant of physical health outcomes (Krause, 2004) and chronic stress is highly likely to be experienced by informal caregivers (Pearlin, Mullan, Semple, & Skaff, 1990). However, among non-caregivers, stress may be generally lower and so play a less prominent role in determining physical health while other determinants are more influential. As MIL is likely to interact differentially with such determinants, its impact on physical health for caregivers and non-caregivers will be different. While MIL may have little impact on other physical health determinants, it has been found to be an important factor for effective management of stress (Homan & Boyatzis, 2010). Thus, in a population where stress is a powerful determinant of physical health, having a strong sense of MIL is likely to protect and maintain physical health. Specifically, MIL may play a mediating role, reducing the effect of stress on physical health (Krause, 2004). In contrast, in a population where stress is lower and has less influence on physical health, MIL is less likely to relate to physical health.

Predictors of MIL among older adult informal caregivers

Little is known about how different aspects of informal caregiving relate to MIL. Based on theory and previous research, different aspects of caregiving were investigated in regards to their relationship to MIL. These included: objective caregiving factors (frequency of care, duration of care, extent of care, co-residence, and caregiver-recipient relationship) and subjective factors (negative and positive appraisals, perceived social support). Demographic and control variables were also included (age, gender, relationship status, ethnicity, SES, educational level, and mental and physical health). Partial support was found for Hypothesis Nine. As hypothesised, perceived social support was the strongest predictor of MIL but contrary to Hypothesis Nine, negative and positive appraisals did not predict MIL. Partial support was also found for Hypothesis Ten. As hypothesised, objective aspects did not predict MIL but contrary to Hypothesis Ten care duration also did not predict MIL. Of the variables included in the study, only education, SES, psychological and physical health, caregiving duration, and social support were significantly related to MIL, and when entered into a multivariate model, only psychological health and social support remained significant predictors.

The relationships between demographic variables and MIL largely corresponded with those found in the general sample. SES and educational level were positively related to MIL while the remaining demographic variables were not significantly related to MIL. Possible reasons for these relationships are discussed above in Section 9.3.

It was hypothesised that care duration would be one objective aspect that would predict MIL on the basis that negative life experiences may stimulate a search for meaning

(King & Hicks, 2009) and that time allows the individual to make sense of the experience, see it within a larger context, and so increase coherence and MIL (Krause, 2007). As the current research only examined meaning in terms of meaning *found*, it is possible, as King and Hicks (2009) propose, that difficult life experiences such as caregiving do stimulate a *search* for meaning. However, other factors, such as the level of support the individual receives in this search for meaning, may be more important in determining whether meaning found is the outcome of this search.

Various other objective aspects of caregiving, namely frequency of care, duration of care, extent of care, co-residence, and relationship of the caregiver to the recipient, were not associated with MIL. This is consistent with previous research (Noonan & Tennstedt, 1997; Quinn, Clare, & Woods, 2012) which has found objective indicators to be poor predictors of situational meaning. The current research suggests this is also the case, as expected, for global meaning. This finding would also seem to support Frankl's (1959) theory of meaning whereby he suggested meaning is not contingent on circumstances but can be found even in the most severe hardship. Frankl emphasised it is not circumstances themselves but how an individual interprets and choses to respond to them which determines whether meaning is found.

Interestingly, however, neither positive nor negative appraisals of caregiving were significantly related to MIL among informal caregivers yet Frankl's (1959) theory of meaning would suggest that relating positively to an experience would enhance MIL. Furthermore, while previous research has found positive appraisals in caregiving to be associated with enhanced well-being (Heo, 2014; Walker et al., 2016) and negative appraisals to be associated with compromised well-being (Kinney, Stephens, Franks, &

Norris, 1995), the current research suggests there is no such similar relationship between appraisals and MIL. A possible reason for this difference is that negative and positive appraisals are largely synonymous with negative and positive affect (Anderson et al., 2013) and constructs traditionally used as well-being outcome measures (e.g. depression, happiness, or anxiety) usually comprise an affective component. Consequently, a relationship between positive appraisals and these constructs is to be expected. In contrast, recent conceptualisations of MIL (Martela & Steger, 2016) argue that, while affect may be an outcome of experiencing life as meaningful, it is not a fundamental component of the construct of MIL. Thus, negative or positive appraisals may correlate strongly with other well-being measures but have a weaker relationship with MIL.

Following this, it may be expected that appraisals will influence MIL if they relate to the components of MIL, namely significance, coherence, and purpose. This is supported in the current research where, as discussed in Section 9.4, it was found that MIL is enhanced among informal caregivers when the caregiver has a strong sense of opportunity for nurturance; that they are responsible and needed for the well-being of another. Whether the individual experiences this responsibility in a positive or negative (i.e. burdensome) sense is not addressed. That is, this appraisal is not 'positive' or 'negative' per se, rather, it is an appraisal of significance. This suggests that appraisals, whether positive or negative, may indeed relate to levels of MIL if they map onto the components of MIL.

Thus, while these results initially appear to provide no support for Frankl's proposition that positively relating to an experience enhances meaning, when taken together with

the provision of social support results, a more nuanced relationship is suggested. Positive appraisals may indeed be associated with higher MIL and negative appraisals with lower MIL on the condition these appraisals also map onto the components of MIL. Similarly, appraisals that may be positive or negative in nature but not map onto the components of MIL may demonstrate no relationship to MIL. As the Positive Value and Negative Impact subscales represent sum scores, the relationship between specific positive or negative appraisals and MIL may be masked by variation in other non-significant items whose scores also contribute to the sum score.

A further possible explanation for the absence of a relationship between MIL and positive and negative appraisals of the caregiving situation is that social desirability played a role in participants' responses. Participants may have exaggerated positive perceptions and minimised the negative to avoid disrespect toward the care recipient or feeling embarrassed, ashamed, or ungrateful for rating their situation in a negative way. This would obscure any relationships between appraisals and MIL that might actually be present.

Perceived social support remained the only significant predictor of MIL after controlling for demographic and health variables. This finding converges with previous research linking perceptions of social support with psychological well-being among older adults (Avlund, Lund, Holstein, & Due, 2004; Steverink & Lindenberg, 2006) and caregivers (Brand, Barry, & Gallagher, 2016; Khusaifan & El Keshky, 2017) and with MIL among cancer caregivers (Adams et al., 2014). The current study extends this body of research to demonstrate that social support is important for a sense of MIL among older adult informal caregivers. As Krause (2012) argues, finding MIL (making sense of

one's life and life experiences) is complex and difficult task, this may be particularly so for caregivers making sense of the caregiving role and how it fits within their meaning system. Furthermore, social support provides a sense of identity which, as suggested by Social Identity Theory, is essential for an individual to develop MIL by providing a foundation for perceptions of connectedness and attainment of collective goals. Finally, social support potentially conveys a sense that the individuals is valued an important (significance), relieving feelings of burdensomeness and increasing self-esteem.

Section C Summary

The findings suggest MIL is an important resource for both the physical and the psychological health of older adult caregivers in Aotearoa New Zealand. Variation in MIL uniquely explained some of the variation in both health variables even after controlling for potentially confounding variables. Furthermore, among various objective and subjective aspects of caregiving, social support was the only aspect which significantly predicted MIL after controlling for demographic and health variables.

9.6 Contributions, Limitations, Implications, and Future Research

Contributions and Limitations

The current study examined the relationship between health and MIL, examined volunteering, employment, and informal caregiving as potential sources of MIL, and the role of support provision in these relationships among a representative sample of community dwelling older adults in Aotearoa New Zealand. In addition, the relationships between MIL and health and MIL and various objective and subjective aspects of caregiving were examined in a sample of older adult caregivers.

While previous research (Zika & Chamberlain, 1992) examined relationships between MIL and health among older adults in Aotearoa New Zealand, the study sample was small, not selected at random, and did not incorporate the dimension of physical health. The current study addressed these gaps using a large, representative sample of older adults selected at random. While findings converged with Zika and Chamberlain (1992) in regards to the relationship between MIL and psychological health, it was found that MIL was not significantly related to physical health of older adults in Aotearoa New Zealand. Furthermore, the current study highlighted the importance of controlling for SES when examining the relationships between MIL and health as this variable accounted for relatively large portions of variation in health. Failure to include this variable in previous meaning research may have resulted in exaggerated relationships between MIL and health.

Research had identified a number of important sources of MIL and confirmed that the relative importance of various sources of meaning differs across the lifespan. Despite evidence for differences in sources of meaning among age groups, very little research had investigated sources of MIL among older adults specifically. Considering demographic and social changes and the impact of these on older adulthood, the current research addressed this gap by examining the potential of paid employment, volunteering, or informal caregiving to influence meaning. It was found that participation in paid employment did not confer any direct or indirect advantage or disadvantage in terms of MIL for older adults. Caregiving also had no direct effect on MIL but demonstrated an indirect effect through support provision. Finally, older adults who identified as volunteers had, on average, higher MIL compared to those who were

not volunteers and a greater frequency of volunteering was associated with greater MIL. When considering the nature of employment compared to volunteering, it can be seen that these findings converge with previous research demonstrating the greater importance of self-transcendent activities and relationships for MIL among older adults. The findings are also consistent with various theories of aging which outline the motivational shift that is posited to occur in older adulthood.

Furthermore, the current research examined the role of social support provision in these relationships. The finding that providing social support significantly predicted MIL provides empirical evidence in support of Weiss' (1974) Social Provisions Theory whereby Weiss proposed that lack of an opportunity to provide support would be associated with a sense of existential meaninglessness. The current study provides new understanding by demonstrating that giving social support is also associated with a deeper sense of MIL where previous meaning research had only demonstrated the positive effects on MIL of receiving support (Krause, 2007). This also contributes new understanding to the growing body of social support research which demonstrates the benefits associated with providing support for others by demonstrating a further benefit of giving support: enhanced MIL.

Finally, informal caregivers are a population at increased risk of poor physical and psychological health outcomes. Much research has examined interrelationships between a range of variables and outcomes for informal caregivers to address questions of how deleterious outcomes can be avoided and experiences of caregiving improved. Within this research, meaning has been found to be associated with positive well-being among caregivers (Farran et al., 1997). However, the majority of research as focused on meaning in caregiving and where MIL has been included, it has been conceptualised in

a narrow and biased manner which is not consistent with current understandings of the construct of MIL. Furthermore, despite the mean age of informal caregivers increasing at faster rate than the population in general, older adults are generally positioned within caregiving research as care recipients with little research specifically examining older adults who are caregivers. Using data from a sample of older adult informal caregivers, the current research found MIL to be an important resource in regards to maintaining both physical and psychological health. Furthermore, while objective aspects of caregiving do not appear to be related to MIL, the current research found that some informal caregivers may experience higher MIL than others due to higher levels of social support.

There are a number of limitations to the current study, several of which pertain to the use of a pre-existing data set. First is the cross-sectional design of the study which precludes the possibility of drawing causal conclusions. While longitudinal analysis would have been more informative in this respect, such analyses were not possible as measures were not repeated across data sets. Also pertaining to a pre-existing data set, measures could not be specifically selected. It was planned to investigate the moderating role of satisfaction with employment status in the relationship between employment and MIL. However, no such specific question was included in the questionnaire and, as outlined in Section 8.1 above, while an alternative means of obtaining this data was considered, the validity of the approach and the quantity of missing data rendered this alternative inappropriate. Furthermore, as with caregiving, paid employment is a highly complex and multifaceted role and it is likely that many job and organisational aspects play a role in determining whether employment contributes to an individual's sense of MIL. While the 2013 HWR Caregiving Supplement allowed for an examination of different aspects of caregiving and their

relationship to MIL, no such questions were included in the HWR section on employment. Consequently, an analysis of the different aspects of employment and their relation to MIL was not possible.

A further limitation, also a consequence of relying on pre-determined measures, pertains to the wording of the volunteering question. To indicate volunteer activity, participants were asked, "If you have given your time for any of the groups or organisations listed below, please indicate how often". Although this wording implies volunteerism (i.e. *unpaid* and *non-compulsory* work), this is not explicitly stated. It is possible participants' answered these questions based on involvement in these groups or organisations which was either paid or purely leisure participation. The possibility that some participants interpreted the question in this manner was confirmed by examination of responses to the 'other' option where participants were asked to specify any other groups or organisations not listed which they had given their time to. The responses given included some purely leisure activities (e.g. member of a choir, member of a craft group, book club). Thus, as participants may have responded to the question on the basis of their involvment in leisure activity or, potentially, even paid work, the relationship reported may be exaggerated or underestimated.

A similar issue pertains to the Social Provisions Scale. As the Social Provisions Scale was not included in the 2013 ICC survey, this data was taken from the 2014 survey. This time frame is a limitation of the current research as it is conceivable that levels of social support changed in the time period between surveys. Examining existing research on social support is one way to help determine the likelihood that substantial changes in social support occurred between the two surveys. Research on the stability of social

support in older adulthood has produced varied results. Field and Minkler (1988) found that social support arising from within the family remained generally stable over time while social support from outside of the family was characterised by change with levels of support associated with variables such as gender and marital status. Martire, Schulz, Mittelmark, and Newsom (1999) also found support for relatively stable levels of social contact and perceived support over a five year period. Across a three year period, Krause (1999) found significant increases in emotional, tangible, and informational support received and significant decreases in tangible support provided but no significant changes in emotional and informational support given and no significant changes in satisfaction with support received and given. However, further examination by Krause (1999) suggested that investigating change at an aggregate level masked substantial changes that were occurring at an individual level. These findings are supported by more recent research. In an analysis of longitudinal data spanning a ten year period, Shaw, Krause, Laing, and Bennett (2007) found considerable individual differences in both the level of social support and the rate of change in social support, demonstrating that changes in social support are not systematic or uniform. Though these findings suggest older adults experience stability but also significant changes in social support over time, these studies span between three and ten year periods while the time difference between surveys used for the current research was much shorter (10 to 18 months). Significant changes may be less likely to have occurred in this relatively short time period. However, it is still possible that social support changes occurred between the 2013 and 2014 surveys so analyses using the SPS scale in current research may under or overestimate relationships. Ideally, future research will measure these variables at the same point in time.

In relation to the age range, although older adults were the population of interest, the oldest participants were 77 years old. Thus, the oldest old, those who are over 80, were not represented. As longevity is projected to continue to increase, examining meaning in those of the older age group will be important. Given the existing evidence of lifespan differences in meaning and sources of meaning, it is possible the findings of the study are less applicable to the oldest old. Similarly, the findings may not extend younger cohorts who will move into older age in the coming years as different experiences of and attitudes towards work, volunteering, caregiving, and life in general are likely to influence if and how meaning is found.

Implications and Future Research

The fundamental importance of well-being throughout the lifespan and into older adulthood is well recognised at a national (Ministry of Health, 2016) and international (World Health Organisation, 2016) level. The New Zealand government's Healthy Ageing Strategy (Ministry of Health, 2016) prioritises the maximisation of mental health, physical health, well-being, and resilience of older adults. The current research fits within this broader context of valuing, maintaining, and prioritising the well-being of older adults. Broadly, the findings suggest that MIL is an important resource for the well-being, specifically the psychological health, of older adults in Aotearoa New Zealand. Considering the socio-historical context in which older adulthood is lived out, the current research contributes to the growing body of literature on MIL in older adulthood, providing insight into how MIL might be promoted among older adults. Various specific implications are discussed below.

Volunteering has previously been successfully used as an intervention for enhancing MIL (Southwick et al., 2006). The current research confirms that increasing older adults' engagement in volunteer activities may also effectively enhance their sense of MIL. However, the current research suggests that simply increasing participation in volunteer activity as intervention may less effective at enhancing MIL if the volunteering activity does not enable certain mechanisms. Namely, MIL is enhanced if the volunteer activity enables perceptions of responsibility for the well-being of others. However, given the small effect size, the relative importance of this particular pathway overall is questionable. Further research is needed to examine other mechanisms by which volunteering enhances MIL among older adults. Elucidating and enabling these mechanisms will help to maximise the effectiveness of volunteering as an intervention for enhancing MIL. Furthermore, as volunteering itself explained only a small proportion of MIL, it is likely more effective to focus on intervening with other more prominent sources of MIL if the aim is to enhance MIL.

Although participation in paid employment did not convey any advantage in terms of MIL, there are other practical implications in relation to employment. As population ages and the supply of younger workers entering the workforce declines, there will be an increasing need to retain older workers past the traditional retirement age to prevent significant labour shortages (New Zealand Work Research Institute, 2015a). The New Zealand government (Department of Labour, 2009) and NGO's (e.g. Equal Employment Opportunities Trust, 2012) are already engaged in discussion and research regarding older adult employment, employment outcomes, and practices and policies for retaining older workers in Aotearoa New Zealand and ensuring the workplace is conducive for these workers. A consideration of MIL may inform the discussion of how

older workers might be retained and how the workplace might be optimised for well-being. Specifically, this would involve considering if and how the employment contributes to purpose, the significance that work holds for the individual, and the degree to which the work matches one's values and beliefs. In addition, further research is needed to investigate how different aspects of employment relate to MIL among older adults in order to better understand how employment may be structured to contribute to meaning and ensure that continued employment does not compromise MIL.

The importance of interpersonal relationships in general for one's sense of MIL is well established in the literature (Bar-Tur et al., 2001; Dunn & O'Brien, 2009; Krause, 2007; Lambert et al., 2013). More specifically, the importance of receiving social support within these relationships in order to enhance MIL has been previously demonstrated (Krause, 2007). However, findings of the current research suggest it is not just relationships themselves that are important to older adults but the opportunity to provide support to others within those relationships and, in particular, to feel important, responsible, and needed for the well-being of others. An important implication of this finding is that it demonstrates a further pathway by which meaning can be enhanced in older adults: not just through ensuring adequate social support is received but also by ensuring adequate opportunities for older adults to provide support to others. However, as with social support received, there are different components of support given, for example, giving tangible support or giving emotional support. Further research is needed to examine how different components of giving support relate to MIL.

While the continued support of older adults is indeed important, it should not overshadow the valuing of older adults as an important source of support to others,

whatever form that support might take. The New Zealand Healthy Ageing Strategy (Ministry of Health, 2016) proposes a focus on developing age-friendly communities which are defined not only as communities which support older adults but as communities where the skills and resources of older adults are recognised and valued and opportunities for participation are maximised. It is important these proposals are translated into outcomes whereby older adults are not relegated to passive roles within families and communities but are members whose skills, voices, and resources continue to be valued as significant.

In relation to caregiving, the findings of the current study suggest that MIL is an important resource for maintaining the physical and mental health of older adult informal caregivers in Aotearoa New Zealand. Maintaining meaning among older adult informal caregivers may offset some of the deleterious psychological and physical health effects often associated with caregiving. This will be particularly important as the demand for informal caregivers is projected to continue to increase and older adults will be increasingly likely to take on this role. The findings of the current research are important as they illustrate one pathway by which the physical and psychological health of older adult caregivers can be maintained and enhanced and the experience of caregiving improved. Specifically, the findings suggest that interventions targeting objective aspects of caregiving, for example, reducing the hours spent caregiving, while reducing burden, may have little effect on MIL. Conversely, maintaining and enhancing social support for older adult informal caregivers may be the most effective means of increasing meaning. However, any interventions targeting this aspect must take into consideration the complex and subtle ways in which access to of social support may be impaired for caregivers (Krause, 2006). Furthermore, identification of the specific

components of social support which contribute to MIL among caregivers will be an important focus for future research.

Clinical Implications

At an individual level, the current study lends support to the incorporation of meaning into mental health interventions for older adult. The incorporation of MIL into psychotherapy and counselling is not a new occurrence; Frankl's (1959) meaning based Logotherapy has been in use for over 50 years. MIL was found be associated with the psychological health of participants, suggesting one way by which psychologists and mental health professionals may improve the mental well-being of older adult clients is through incorporation of meaning focused interventions. However, the current research only identified MIL as a correlate of general mental health yet mental health comprises many aspects. Further research is needed to investigate which specific positive and negative aspects of mental health may be influenced by MIL.

While Logotherapy is explicitly oriented towards enhancing a sense of MIL, other systems of psychotherapy may also be particularly useful for increasing MIL. Life review therapy, an evidence-based therapeutic approach found to be effective for the treatment of depression in older adults, generally involves an examination of one's life to provide perspective and acceptance in addition to working towards resolution of past conflicts (Scogin, Welsh, Hanson, Stump, & Coates, 2005). It is possible that working through such a process contributes to MIL, particularly by providing a sense of coherence. Similarly, Acceptance and Commitment Therapy (ACT), with a focus on identification of the individual's core values and values driven goals, may be a particularly effective for enhancing MIL by contributing to a sense of purpose.

While complete systems of psychotherapy may be particularly useful for increasing MIL, the interventions and techniques embodied in a range of therapeutic modalities may be used to encourage the development of MIL. For example, Sharing of the case formulation may contribute to meaning by providing individuals with a degree of coherence and the assurance that their current experience makes sense. Similarly, exploring Erikson's (1980) life stages with a client in a therapeutic setting may contribute to a sense of coherence. Behavioural activation may be utilised to include activities that allow individuals to experience their lives and themselves as worthwhile and significant. Finally, the development of therapy goals and life goals may provide a sense of purpose and, in turn, MIL. Thus, there are a interventions clinicians may use which may have the potential to increase a client's sense of MIL.

References

Abramson, T. A. (2015). Older adults: The “panini sandwich” generation. *Clinical Gerontologist, 38*(4), 251-267. doi:10.1080/07317115.2015.1032466

Achenbaum, W. A. (2015). A History of Ageism Since 1969. *Generations, 39*(3), 10-16.

Adams, R. N., Mosher, C. E., Cannady, R. S., Lucette, A., & Kim, Y. (2014). Caregiving experiences predict changes in spiritual well-being among family caregivers of cancer patients. *Psycho-Oncology, 23,* 1178-1184. doi:10.1002/pon.3558

Allan, B. A., Duffy, R. D., & Douglass, R. (2015). Meanin in life and work: A developmental perspective. *Journal of Positive Psychology, 10*(4), 323-331.

Anderson, J. E., Kay, A. C., & Fitzsimons, G. M. (2013). Finding silver linings: Meaning making as a compensatory response to negative experiences. In K. D. Markman, T. Proulx, M. J. Lindberg, K. D. Markman, T. Proulx, & M. J. Lindberg (Eds.), *The psychology of meaning.* (pp. 279-295). Washington, DC: American Psychological Association.

Anderson, N. D., Dawson, D. R., Binns, M. A., Damianakis, T., Kröger, E., Wagner, L. M., . . . Cook, S. L. (2014). The benefits associated with volunteering among seniors: A critical review and recommendations for future research. *Psychological Bulletin, 140*(6), 1505-1533. doi:10.1037/a0037610

Andersson, B., & Öhlén, J. (2005). Being a hospice volunteer. *Palliative Medicine, 19*(8), 602-609.

Andrews, K. (2001). *National strategy for an ageing Australia: An older Australia, challenges and opportunities for all*. Retrieved from https://www.ifa-fiv.org/wp-

content/uploads/2012/11/062_Australia-2001-National-Strategy-for-an-Ageing-Australia.pdf

Ang, S., & Malhotra, R. (2016). Association of received social support with depressive symptoms among older males and females in Singapore: Is personal mastery an inconsistent mediator? *Social Science and Medicine, 153*, 165-173. doi:10.1016/j.socscimed.2016.02.019

Antonovsky, A. (1979). *Health, stress, and coping*. San Fransisco, CA: Jossey-Bass.

Antonucci, T. C., & Johnson, E. H. (1994). Conceptualization and methods in social support theory and research as related to cardiovascular disease. In S. A. Shumaker & S. M. Czajkowski (Eds.), *Social support and cardiovascular disease* (pp. 21-40). New York, NY: Plenum Press.

Anum, J., & Dasti, R. (2016). Caregiver burden, spirituality, and psychological well-being of parents having children with Thalassemia. *Journal of Religion and Health, 55*(3), 941-955. doi:10.1007/s10943-015-0127-1

Archbold, P. G. (1983). Impact of Parent-Caring on Women. *Family Relations, 32*(1), 39-45.

Avlund, K., Lund, R., Holstein, B. E., & Due, P. (2004). Social relations as determinant of onset of disability in aging. *Archives of Gerontology and Geriatrics, 38*(1), 85-99.

Balducci, C., Mnich, E., McKee, K. J., Lamura, G., Beckmann, A., Krevers, B., . . . Oberg, B. (2008). Negative impact and positive value in caregiving: Validation of the COPE index in a six-country sample of carers. *The Gerontologist, 48*(3), 276-286.

Baltes, P. B., & Baltes, M. M. (1990). *Successful aging: Perspectives from the behavioural sciences.* Cambridge, United Kindom: Cambridge University Press.

Bamonti, P., Lombardi, S., Duberstein, P. R., King, D. A., & Van Orden, K. A. (2016). Spirituality attenuates the association between depression symptom severity and meaning in life. *Aging and Mental Health, 20*(5), 494-499. doi:10.1080/13607863.2015.1021752

Bar-Tur, L., Savaya, R., & Prager, E. (2001). Sources of meaning in life for young and old Israeli Jews and Arabs. *Journal of Aging Studies, 15*, 253-269. doi:10.1016/S0890-4065(01)00022-6

Barrera, M., & Garrison-Jones, C. (1992). Family and peer social support as specific correlates of adolescent depressive symptoms. *Journal Of Abnormal Child Psychology, 20*(1), 1-16.

Bastawrous, M. (2013). Caregiver burden: A critical discussion. *International Journal of Nursing Studies, 50*, 431-441.

Battersby, A., & Phillips, L. (2016). In the end it all makes sense: Meaning in life at either end of the adult lifespan. *The International Journal of Aging and Human Development, 83*(2), 184-204. doi:10.1177/0091415016647731

Batthyany, A., & Russo-Netzer, P. (2014). Psychologies of meaning. In A. Batthyany & P. Russo-Netzer (Eds.), Meaning in positive and existential psychology (pp. 3-24). doi:10.1007/978-1-4939-0308-5

Battista, J., & Almond, R. (1973). The development of meaning in life. *Psychiatry, 36*(4), 409-427.

Baumeister, R. F. (1991). *Meanings of life*. New York, NY: Guilford Press.

Bentley, J. P., Brown, C. J., McGwin, G., Jr., Sawyer, P., Allman, R. M., & Roth, D. L. (2013). Functional status, life-space mobility, and quality of life: A longitudinal mediation analysis. *Quality of Life Research, 22*(7), 1621-1632. doi:10.1007/s11136-012-0315-3

Berkman, L. F. (1984). Assessing the physical health effects of social networks and social support. *Annual Review of Public Health, 5*(1), 413-432.

Bernard, M., Braunschweig, G., Fegg, M. J., & Borasio, G. D. (2015). Meaning in life and perceived quality of life in Switzerland: Results of a representative survey in the German, French and Italian regions. *Health And Quality Of Life Outcomes, 13*, 160-170. doi:10.1186/s12955-015-0353-y

Blackburn, L., & Owens, G. P. (2015). The effect of self efficacy and meaning in life on posttraumatic stress disorder and depression severity among veterans. *Journal of Clinical Psychology, 71*(3), 219-228. doi:10.1002/jclp.22133

Boston, J., & Davey, J. A. (2006). Introduction. In J. Boston & J. A. Davey (Eds.), *Implications of population ageing: Opportunities and risks*. Wellington, NZ: Institute of Policy Studies.

Bowling, A. (2005). *Ageing well : Quality of life in old age*. Maidenhead, United Kingdom: Open University Press.

Brand, C., Barry, L., & Gallagher, S. (2016). Social support mediates the association between benefit finding and quality of life in caregivers. *Journal of Health Psychology, 21*(6), 1126-1136.

Brandstätter, M., Baumann, U., Borasio, G. D., & Fegg, M. J. (2012). Systematic review of meaning in life assessment instruments. *Psycho-Oncology, 21*(10), 1034-1052. doi:10.1002/pon.2113

Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. *Journal of Applied Psychology, 35*(5), 307-311. doi:10.1037/h0055617

Brown, S. L., Nesse, R. M., Vinokur, A. D., & Smith, D. M. (2003). Providing social support may be more beneficial than receiving it: results from a prospective study of mortality. *Psychological Science, 14*(4), 320-327.

Brown, W. M., Consedine, N. S., & Magai, C. (2005). Altruism relates to health in an ethnically diverse sample of older adults. *The Journals of Gerontology, Series B*(3), 143-152.

Bytheway, B. (1995). *Ageism*. Bristol, PA: Open University Press.

Cannon, M. L. (2015). What is aging? *Disease-a-Month, 61*, 454-459.

Caplan, G. (1974). *Support systems and community mental health: Lectures on concept development*. New York, NY: Behavioural Publications.

Carstensen, L. (1992). Motivation for social contact across the life span: a theroy of socioemotional selectivity. *Nebraska Symposium on Motivation, 40*, 209-254.

Cartensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54*(3), 165-181.

Cassel, J. (1976). The contribution of the social environment to host resistance. *American Journal of Epidemiology, 104*(2), 107-123.

Chappell, N. L., & Funk, L. M. (2011). Social support, caregiving, and aging. *Canadian Journal on Aging, 30*(3), 355-370. doi:10.1017/S0714980811000316

Chappell, N. L., & Prince, M. J. (1997). Reasons why Canadian seniors volunteer. *Canadian Journal on Aging, 16*(2), 336-353.

Chen, S. (2013a). Introduction: Social support and health in a global perspective. In S. Chen (Ed.), *Social support and health* (pp. ix-xviii). New York, NY: Nova Publishers.

Chen, S. (2013b). *Social support and health : Theory, research, and practice with diverse populations*. New York, NY: Nova Science Publishers.

Chippendale, T., & Boltz, M. (2015). Living Legends: Effectiveness of a program to enhance sense of purpose and meaning in life among community-dwelling older

adults. *American Journal of Occupational Therapy, 69*(4), 1-11. doi:10.5014/ajot.2015.014894

Chrisler, J. C., Barney, A., & Palatino, B. (2016). Ageism can be hazardous to women's health: Ageism, sexism, and stereotypes of older women in the healthcare system. *Journal of Social Issues, 72*(1), 86-104. doi:10.1111/josi.12157

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*(5), 300-314.

Cohen, C. A., Colantonio, A., & Vernich, L. (2002). Positive aspects of caregiving: Rounding out the caregiver experience. *International Journal of Geriatric Psychiatry, 17*(2), 184-188. doi:10.1002/gps.561

Cohen, C. A., Gold, D. P., Shulman, K. I., & Zucchero, C. A. (1994). Positive aspects in caregiving: An overlooked variable in research. *Canadian Journal on Aging/La Revue canadienne du vieillissement, 13*(03), 378-391. doi:10.1017/S071498080000619X

Cohen, S., Gottlieb, B. H., & Underwood, L. G. (2000). Social relations and health. In S. Cohen, L. G. Underwood, & G. B. H. (Eds.), *Social support measurement and intervention: a guide for health and social scientists* (pp. 3-25). Oxford, England: Oxford University Press.

Cooper, C., Balamurali, T. B. S., & Livingston, G. (2007). A systematic review of the prevalence and covariates of anxiety in caregivers of people with dementia. *International Psychogeriatrics*, *19*(02), 175-195. doi:10.1017/S1041610206004297

Cruwys, T., Haslam, S. A., Dingle, G. A., Haslam, C., & Jetten, J. (2014). Depression and Social Identity: An Integrative Review. *PERSONALITY AND SOCIAL PSYCHOLOGY REVIEW, 18*(3), 215-238.

Cutrona, C., Russell, D., & Rose, J. (1986). Social support and adaptation to stress by the elderly. *Psychology and Aging, 1*(1), 47-54. doi:10.1037/0882-7974.1.1.47

Cutrona, C. E., & Russell, D. W. (1987). The provisions of social relationships and adaptation to stress. *Advances in Personal Relationships, 1*, 37-67.

Damon, W., Menon, J., & Bronk, K. C. (2003). The development of purpose during adolescence. *Applied Developmental Science, 7*(3), 119-128.

Darragh, A. R., Sommerich, C. M., Lavender, S. A., Tanner, K. J., Vogel, K., & Campo, M. (2015). Musculoskeletal discomfort, physical demand, and caregiving activities in informal caregivers. *Journal of Applied Gerontology, 34*(6), 734-760. doi:10.1177/0733464813496464

Davis, C. G., Nolen-Hoeksema, S., & Larson, J. (1998). Making sense of loss and benefiting from experience: Two construals of meaning. *Journal of Personality and Social Psychology, 75*(2), 561-574.

Debats, D. L. (1999). Sources of meaning: An investigation of significant commitments in life. *Journal of Humanistic Psychology, 39*(4), 30-57. doi:10.1177/0022167899394003

Debats, D. L. (2000). An inquiry into existential meaning: Theoretical, clinical, and phenomenal perspectives. In G. T. Reker & K. Chamberlain (Eds.), *Exploring existential meaning: Optimizing human development across the life span*. Thousand Oaks, CA: Sage.

del-Pino-Casado, R., Palomino-Moral, P. A., & Frías-Osuna, A. (2015). The association of satisfaction and perceived burden with anxiety and depression in primary caregivers of dependent elderly relatives. *Research in Nursing and Health, 38*(5), 384-391. doi:10.1002/nur.21671

Delle Fave, A., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research, 100*(2), 185-207.

Department of Health. (2013). *Positive ageing - starts now! The national positive ageing strategy*. Retrieved from http://health.gov.ie/wp-content/uploads/2014/03/National_Positive_Ageing_Strategy_English.pdf

Department of Labour. (2009). *The working patterns of older workers*. Retrieved from http://www.mbie.govt.nz/publications-research/research/labour-market-and-skills/working-patterns-older-workers-full.pdf:

Department of Labour. (2011). *Review of flexible working arrangements in New Zealand workplaces: Survey findings.* Wellington, New Zealand: Department of Labour.

Dezutter, J., Luyckx, K., & Wachholtz, A. (2015). Meaning in life in chronic pain patients over time: Associations with pain experience and psychological well-being. *Journal of Behavioral Medicine, 38*(2), 384-396. doi:10.1007/s10865-014-9614-1

Dik, B. J., Byrne, Z. S., & Steger, M. F. (Eds.). (2013). *Purpose and meaning in the workplace*. Washington, DC: American Psychological Association.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (2 ed.). New York, NY: John Wiley and Sons.

Dobríková, P., Pčolková, D., AlTurabi, L. K., & West, D. J. (2015). The effect of social support and meaning of life on the quality-of-life care for terminally ill patients. *American Journal of Hospice and Palliative Medicine, 32*(7), 767-771. doi:10.1177/1049909114546208

Dubus, N. M. (2014). Self-perception of when old age begins for cambodian elders living in the United States. *Journal of Cross-Cultural Gerontology, 29*(2), 185-199. doi:10.1007/s10823-014-9230-0

Duffy, R. D., Autin, K. L., & Bott, E. M. (2015). Work volition and job satisfaction: Examining the role of work meaning and person-environment fit. *Career Development Quarterly, 63*(2), 126-140.

Dunn, M. G., & O'Brien, K. M. (2009). Psychological health and meaning in life stress, social support, and religious coping in Latina/Latino immigrants. *Hispanic Journal of Behavioral Sciences, 31*(2), 204-227.

Durie, M. H. (1999). Kaumatautanga: Reciprocity, Maori elderly and whanau. *New Zealand Journal of Psychology, 28*(2), 102-106.

Ebersole, P. (1998). Types and depth of written life meanings. In P. T. P. Wong & P. S. Fry (Eds.), *The human quest for meaning: A handbook of psychological research and clinical applications*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ebersole, P., & DePaola, S. (1989). Meaning in life depth in the active married elderly. *Journal of Psychology, 123*(2), 171-178.

Egdell, V. (2013). Who cares? Managing obligation and responsibility across the changing landscapes of informal dementia care. *Ageing and Society, 33*(5), 888-907.

Elmir, R. (2014). Finding meaning in life following emergency postpartum hysterectomy: What doesn't kill us makes us stronger. *Journal Of Midwifery and Women's Health, 59*(5), 510-515. doi:10.1111/jmwh.12169

Equal Employment Opportunities Trust. (2012). *Older workers: Challenging myths and managing realities*. Retrieved from https://diversityworksnz.org.nz/wp-

content/uploads/2016/03/Older-Workers-Challenging-Myths-and-Managing-Realities.pdf:

Erikson, E. H. (1959). *Identity and the life cycle*. New York, NY: International University Press.

Erikson, E. H. (1980). *Identity and the life cycle*. New York, NY: W. W. Norton.

Farran, C. J., Miller, B., Kaufman, J. E., & Davis, L. (1997). Race, finding meaning, and caregiver distress. *Journal of Aging and Health, 9*(3), 316-333.

Farran, C. J., Miller, B., Kaufman, J. E., Donner, E., & Fogg, L. (1999). Finding meaning through caregiving: Development of an instrument for family. *Journal of Clinical Psychology, 55*(9), 1107-1125.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4 ed.). London, England: Sage.

Field, D., & Minkler, M. (1988). Continuity and change in social support between young-old and old-old or very-old. *Journal of Gerontology, 43*(4), 100-106.

Fisher, J. D., Nadler, A., & Whitcher-Alagna, S. (1982). Recipient reactions to aid. *Psychological Bulletin, 91*(1), 27-54. doi:10.1037/0033-2909.91.1.27

Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science and Medicine, 45*(8), 1207-1221. doi:http://dx.doi.org/10.1016/S0277-9536(97)00040-3

Frankl, V. E. (1959). *Man's search for meaning*. Boston, MA: Beacon Press.

Fredrickson, B. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions: Biological Sciences, 359*(1449), 1367-1377.

George, L. K., & Gwyther, L. P. (1986). Caregiver well-being: A multidimensional examination of family caregivers of demented adults. *The Gerontologist, 26*(3), 253-259.

George, L. K., & Park, C. L. (2013). Are meaning and purpose distinct? An examination of correlates and predictors. *Journal of Positive Psychology, 8*(5), 365-375.

George, L. S., & Park, C. L. (2017). Meaning in life and violations of beliefs and goals: Reciprocal relations among individuals with congestive heart failure. *Anxiety, Stress, and Coping, 30*(3), 282-289. doi:10.1080/10615806.2016.1253067

Glaw, X., Kable, A., Hazelton, M., & Inder, K. (2017). Meaning in life and meaning of life in mental health care: An integrative literature review. *Issues in Mental Health Nursing, 38*(3), 243-252. doi:10.1080/01612840.2016.1253804

Green, B. L., Furrer, C. J., & McAllister, C. L. (2011). Does attachment style influence social support or the other way around? A longitudinal study of Early Head Start mothers. *Attachment and Human Development, 13*(1), 27-47.

Grimmond, D. (2014). *The economic value and impacts of informal care in New Zealand*. Retrieved from https://cdn.auckland.ac.nz/assets/central/about/equal-opportunities/information-for-staff/Informationforstaffcarersdocuments/The%20economic%20value%20of%20informal%20care%20in%20New%20Zealand%20Final%20copy.pdf

Grouden, M. E., & Jose, P. E. (2014). How do sources of meaning in life vary according to demographic factors? *New Zealand Journal of Psychology, 43*(3), 29-38.

Gruenewald, T. L., Karlamangla, A. S., Greendale, G. A., Singer, B. H., & Seeman, T. E. (2007). Feelings of usefulness to others, disability, and mortality in older adults: The MacArthur Study of Successful Aging. *The Journals of Gerontology, Series B*(1), 28-38.

Haber, M. G., Cohen, J. L., Lucas, T., & Baltes, B. B. (2007). The relationship between self-reported received and perceived social support: A meta-analytic review.

American Journal of Community Psychology, 39(1/2), 133-144. doi:10.1007/s10464-007-9100-9

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6 ed.). Upper Saddle River, NJ: Pearson.

Hao, Y. N. (2008). Productive activities and psychological well-being among older adults. *Journals of Gerontology Series B - Psychological Sciences and Social Sciences, 63*(2), S64-S72.

Haugan, G. (2014). Meaning-in-life in nursing-home patients: A valuable approach for enhancing psychological and physical well-being? *Journal of Clinical Nursing, 23*(13/14), 1830-1844. doi:10.1111/jocn.12402

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.

Hayward, J. (2012). *Biculturalism: Biculturalism in the state sector*. Retrieved from https://www.teara.govt.nz/en/photograph/32143/royal-commission-on-social-policy-1988

Heine, S. J., Proulx, T., & Vohs, K. D. (2006). The Meaning Maintenance Model: On the coherence of social motivations. *Personality & Social Psychology Review, 10*(2), 88-110.

Heintzelman, S. J., & King, L. A. (2014). Life is pretty meaningful. *American Psychologist, 69*(6), 561-574.

Heintzelman, S. J., Trent, J., & King, L. A. (2013). Encounters with objective coherence and the experience of meaning in life. *Psychological Science, 24*(6), 991-998.

Heisel, M. J., & Flett, G. L. (2016). Does recognition of meaning in life confer resiliency to suicide ideation among community-residing older adults: A

longitudinal investigation. *American Journal of Geriatric Psychiatry, 24*(6), 455-466.

Heisel, M. J., Neufeld, E., & Flett, G. L. (2016). Reasons for living, meaning in life, and suicide ideation: Investigating the roles of key positive psychological factors in reducing suicide risk in community-residing older adults. *Aging and Mental Health, 20*(2), 195-207. doi:10.1080/13607863.2015.1078279

Henderson, S. (1977). The social network, support and neurosis: The function of attachment in adult life. *The British Journal of Psychiatry, 131*, 185-191.

Henricksen, A., & Stephens, C. (2010). An exploration of the happiness-enhancing activities engaged in by older adults. *Ageing International, 35*(4), 311-326. doi:10.1007/s12126-010-9059-y

Heo, G. J. (2014). Religious coping, positive aspects of caregiving, and social support among Alzheimer's disease caregivers. *Clinical Gerontologist, 37*(4), 368-385. doi:10.1080/07317115.2014.907588

Herbermann, J. D., & Miranda, D. (2012). Defusing the demographic "time-bomb" in Germany. *Bulletin of the World Health Organization, 90*(1), 6-7. doi:10.2471/BLT.12.020112

Herr, R. M., Bosch, J. A., Loerbroks, A., van Vianen, A. E. M., Jarczok, M. N., Fischer, J. E., & Schmidt, B. (2015). Three job stress models and their relationship with musculoskeletal pain in blue- and white-collar workers. *Journal of Psychosomatic Research, 79*(5), 340-347.

Hicks, J. A., & King, L. A. (2009). Positive mood and social relatedness as information about meaning in life. *The Journal of Positive Psychology, 4*(6), 471-482. doi:10.1080/17439760903271108

Higgins, R., & Meredith, P. (2011). Kaumatua - Maori elders. Retrieved from https://teara.govt.nz/en/kaumatua-maori-elders

Hill, R. D., & Smith, D. J. (2015). Positive aging: At the crossroads of positive psychology and geriatric medicine. In P. A. Lichtenberg, B. T. Mast, B. D. Carpenter, J. Loebach Wetherell, P. A. Lichtenberg, B. T. Mast, B. D. Carpenter, & J. Loebach Wetherell (Eds.), *APA handbook of clinical geropsychology: History and status of the field and perspectives on aging* (pp. 301-329). Washington, DC: American Psychological Association.

Hirst, M. (2005). Carer distress: A prospective, population-based study. *Social Science & Medicine, 61*(3), 697-708. doi:http://dx.doi.org/10.1016/j.socscimed.2005.01.001

Ho, M. Y., Cheung, F. M., & Cheung, S. F. (2010). The role of meaning in life and optimism in promoting well-being. *Personality and Individual Differences, 48*, 658-663.

Hofer, J., Busch, H., Au, A., Polackova Solcova, I., Tavel, P., & Wong, T. T. (2014). For the benefit of others: Generativity and meaning in life in the elderly in four cultures. *Psychology and Aging, 29*(4), 764-775.

Homan, K. J., & Boyatzis, C. J. (2010). Religiosity, sense of meaning, and health behaviour in older adults. *The International Journal for the Psychology of Religion, 20*, 173-186.

House, J. S. (1981). *Work stress and social support*. Reading, MA: Addison-Wesley.

Hulin, C. L. (2014). Work and being: The meanings of work in contemporary society. In J. K. Ford, J. R. Hollenbeck, A. M. Ryan, J. K. Ford, J. R. Hollenbeck, & A. M. Ryan (Eds.), *The nature of work: Advances in psychological theory,*

methods, and practice (pp. 9-33). Washington, DC: American Psychological Association.

Human Rights Act. No. 82. (1993). Retrieved from http://www.legislation.govt.nz/act/public/1993/0082/latest/DLM304212.html:

Inagaki, T. K., Bryne Haltom, K. E., Shosuke, S., Jevtic, I., Hornstein, E., Bower, J. E., . . . Suzuki, S. (2016). The neurobiology of giving versus receiving support: The role of stress-related and social reward-related neural activity. *Psychosomatic Medicine, 78*(4), 443-453.

International Labour Organization. (2011). *Manual on the measurement of volunteer work.* Retrieved from http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_162119.pdf

Isik, S., & Üzbe, N. (2015). Personality traits and positive/negative affects: An analysis of meaning in life among adults. *Educational Sciences: Theory and Practice, 15*(3), 587-595.

Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York, NY: The Free Press.

Jensen, J., Spittal, M., Crichton, S., Sathiyandra, S., & Krishnan, V. (2002). *Direct measurement of living standards: The New Zealand ELSI scale*. Retrieved from https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/monitoring/direct-measurement-of-living-standards-ch1.pdf:

Jensen, J., Spittal, M., & Krishnan, V. (2005). *ELSI short form: User manual for a direct measure of living standards.* Wellington, New Zealand: Ministry of Social Development.

Jorgensen, D., Parsons, M., Jacobs, S., & Arksey, H. (2010). The New Zealand informal caregivers and their unmet needs. *The New Zealand Medical Journal, 123*, 9-16.

Jurica, J., Barenz, J., Shim, Y., Graham, K., & Steger, M. F. (2014). Ultimate concerns from existential and positive psychological perspectives. In A. Batthyany & P. Russo-Netzer (Eds.), Meaning in positive and existential psychology (pp. 115-129). doi:10.1007/978-1-4939-0308-5

Kaplan, B. H., Cassel, J. C., & Gore, S. (1977). Social support and health. *Medical Care, 15*(5), 47-58.

Katz, S., & Calasanti, T. (2015). Critical perspectives on successful aging: Does it "appeal more than it illuminates"? *The Gerontologist, 55*(1), 26-33.

Keyes, C. L., & Westerhof, G. J. (2012). Chronological and subjective age differences in flourishing mental health and major depressive episode. *Aging and Mental Health, 16*(1), 67-74. doi:10.1080/13607863.2011.596811

Khazaee-pool, M., Sadeghi, R., Majlessi, F., & Rahimi Foroushani, A. (2015). Effects of physical exercise programme on happiness among older people. *Journal of Psychiatric and Mental Health Nursing, 22*(1), 47-57. doi:10.1111/jpm.12168

Khusaifan, S. J., & El Keshky, M. E. S. (2017). Social support as a mediator variable of the relationship between depression and life satisfaction in a sample of Saudi caregivers of patients with Alzheimer's disease. *International Psychogeriatrics, 29*(2), 239-248. doi:10.1017/S1041610216001824

Kim, B. J., Lee, Y., Sangalang, C., & Harris, L. M. (2015). The impact of employment and self-rated economic condition on the subjective well-being of older Korean Immigrants. *The International Journal of Aging and Human Development, 81*(3), 189-203. doi:10.1177/0091415015607675

King, L. A., & Hicks, J. A. (2009). Detecting and constructing meaning in life events. *Journal of Positive Psychology, 4*(5), 317-330.

King, L. A., Hicks, J. A., Krull, J. L., & Del Gaiso, A. K. (2006). Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology, 90*(1), 179-190.

Kinney, J. M., & Stephens, M. A. (1989). Hassles and uplifts of giving care to a family member with dementia. *Psychology and Aging, 4*(4), 402-408. doi:10.1037//0882-7974.4.4.402

Kinney, J. M., Stephens, M. A. P., Franks, M. M., & Norris, V. K. (1995). Stresses and satisfactions of family caregivers to older stroke patients. *Journal of Applied Gerontology, 14*(1), 3-21.

Kivimäki, M., Nyberg, S. T., Batty, G. D., Fransson, E. I., Heikkilä, K., Alfredsson, L., . . . Theorell, T. (2012). Job strain as a risk factor for coronary heart disease: a collaborative meta-analysis of individual participant data. *Lancet, 380*, 1491-1497. doi:10.1016/S0140-6736(12)60994-5

Konrath, S., & Brown, S. (2013). The effects of giving on givers. In M. L. Newman, N. A. Roberts, M. L. Newman, & N. A. Roberts (Eds.), *Health and social relationships: The good, the bad, and the complicated.* (pp. 39-64). Washington, DC, US: American Psychological Association.

Konrath, S., Fuhrel-Forbis, A., & Lou, A. (2012). Motives for volunteering are associated with mortality risk in older adults. *Health Psychology, 31*(1), 87-96.

Konstam, V., Holmes, W., Wilczenski, F., Baliga, S., Lester, J., & Priest, R. (2003). Meaning in the lives of caregivers of individuals with Parkinson's Disease. *Journal of Clinical Psychology in Medical Settings, 10*(1), 17-25.

Koopman-Boyden, P., & Waldegrave, C. (2009). Introduction. In P. Koopman-Boyden & C. Waldegrave (Eds.), *Enhancing wellbeing in an ageing society: 65-84 year*

old New Zealanders in 2007 (pp. 1-7). Retrieved from http://www.ewas.net.nz/Publications/filesEWAS/EWAS_M1.pdf.

Kotter-Grühn, D., Kleinspehn-Ammerlahn, A., Gerstorf, D., & Smith, J. (2009). Self-perceptions of aging predict mortality and change with approaching death: 16-year longitudinal results from the Berlin Aging Study. *Psychology and Aging, 24*(3), 654-667. doi:10.1037/a0016510

Kramer, B. J. (1997). Gain in the caregiving experience: Where are we? What next? *The Gerontologist, 37*(2), 218-232.

Krause, N. (1999). Assessing change in social support during late life. *Research on Aging, 21*(4), 539-569.

Krause, N. (2004). Stressors arising in highly valued roles, meaning in life, and the physical health status of older adults. *Journal of Gerontology, 59B*(5), 5287-5297.

Krause, N. (2006). Social relations in late life. In J. Hendricks, J. H. Schulz, S. J. Cutler, R. H. Binstock, & L. K. George (Eds.), *Handbook of aging and the social sciences* (6 ed.). Amsterdam, Netherlands: Academic Press.

Krause, N. (2007). Longitudinal study of social support and meaning in life. *Psychology and Aging, 22*(3), 456-469.

Krause, N. (2009a). Meaning in life and mortality. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences, 64B*(4), 517-527 doi:geronb/gbp047

Krause, N. (2009b). Meaning in life and mortality. *Journal of Gerontology: Social Sciences, 64B*(4), 517-527.

Krause, N. (2012). Meaning in life and healthy aging. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and applications* (2 ed., pp. 409-432). New York, NY: Routledge.

Kulik, L., Shilo-Levin, S., & Liberman, G. (2017). The contribution of role satisfaction, meaning in life and work-home conflict to explaining well-being among working grandparents. *Anxiety, Stress, and Coping, 30*(3), 333-346. doi:10.1080/10615806.2016.1269322

Lam, S., & Dickerson, S. S. (2013). Social relationships, social threat, and health. In M. L. Newman & N. A. Roberts (Eds.), *Health and social relationships: The good, the bad, and the complicated* (pp. 19-38). doi:10.1037/14036-003

Lamb, S. (2014). Permanent personhood or meaningful decline? Toward a critical anthropology of successful aging. *Journal of Aging Studies, 29*, 41-52. doi:http://dx.doi.org/10.1016/j.jaging.2013.12.006

Lambert, N. M., Stillman, T. F., Baumeister, R. F., Fincham, F. D., Hicks, J. A., & Graham, S. M. (2010). Family as a salient source of meaning in young adulthood. *5*(5), 367-376.

Lambert, N. M., Stillman, T. F., Hicks, J. A., Kamble, S., Baumeister, R. F., & Fincham, F. D. (2013). To belong is to matter: Sense of belonging enhances meaning in life. *Personality and Social Psychology Bulletin, 39*(11), 1418-1427. doi:10.1177/0146167213499186

Lavretsky, H. (2014). *Resilience and Aging: Research and Practice*. Baltimore, MD: Johns Hopkins University Press.

Lawton, M. P., Moss, M. S., Winter, L., & Hoffman, C. (2002). Motivation in later life: Personal projects and well-being. *Psychology and Aging, 17*(4), 539-547. doi:10.1037/0882-7974.17.4.539

Leary, M. R., & MacDonald, G. (1995). Individual differences in self-esteem: A review and theoretical integration. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 401-418). New York, NY: Guilford.

Lemon, B. W., Bengtson, V. L., & Peterson, J. A. (1972). An exploration of the activity theory of aging: Activity types and life satisfaction among in-movers to a retirement community. *Journal of Gerontology, 27*(4), 511-523.

Lin, N., Ensel, W. M., Simeone, R. S., & Kuo, W. (1979). Social support, stressful life events, and illness: A model and an empirical test. *Journal of Health and Social Behaviour, 20*(2), 108-119.

Littman-Ovadia, H., & Steger, M. (2010). Character strengths and well-being among volunteers and employees: Toward an integrative model. *Journal of Positive Psychology, 5*(6), 419-430. doi:10.1080/17439760.2010.516765

Löckenhoff, C. E., De Fruyt, F., Terracciano, A., McCrae, R. R., De Bolle, M., Costa, P. T., . . . Yik, M. (2009). Perceptions of aging across 26 cultures and their culture-level associates. *Psychology and Aging, 24*(4), 941-954. doi:10.1037/a0016901

Lu, N., Liu, J., & Lou, V. W. Q. (2015). Caring for frail elders with musculoskeletal conditions and family caregivers' subjective well-being: The role of multidimensional caregiver burden. *Archives of Gerontology and Geriatrics, 61*, 411-418.

Lum, H. D., Lo, D., Hooker, S., & Bekelman, D. B. (2014). Caregiving in heart failure: Relationship quality is associated with caregiver benefit finding and caregiver burden. *Heart and Lung: The Journal of Acute and Critical Care, 43*(4), 306-310. doi:http://dx.doi.org/10.1016/j.hrtlng.2014.05.002

Luoh, M. C., & Herzog, A. R. (2002). Individual consequences of volunteer and paid work in old age: Health and mortality. *Journal of Health and Social Behaviour, 43*(4), 490-509.

Lutgendorf, S. K., Vitaliano, P. P., Tripp-Reimer, T., Harvey, J. H., & Lubaroff, D. M. (1999). Sense of coherence moderates the relationship between life stress and natural killer cell activity in healthy older adults. *Psychology and Aging, 14*(4), 552-563. doi:10.1037/0882-7974.14.4.552

Malone, J. C., Liu, S. R., Vaillant, G. E., Rentz, D. M., & Waldinger, R. J. (2016). Midlife Eriksonian psychosocial development: Setting the stage for late-life cognitive and emotional health. *Developmental Psychology, 52*(3), 496-508.

Marin, R. A. (2013). *Global pension crisis: Unfunded liabilities and how we can fill the gap* doi:10.1002/9781118582350

Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and significance. *The Journal of Positive Psychology, 11*(5), 531-545.

Martire, L. M., Schulz, R., Mittelmark, M. B., & Newsom, J. T. (1999). Stability and change in older adults' social contact and social support: The cardiovascular health study. *Journal of Gerontology, 54B*(5), 5302-5311.

Mascaro, N., & Rosen, D. H. (2005). Existential meaning's role in the enhancement of hope and prevention of depressive symptoms. *Journal of personality, 73*(4), 985-1014.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396. doi:10.1037/h0054346

Massey University. (2015). *Code of ethical conduct for research, teaching and evaluations involving human participants*. Retrieved from https://www.massey.ac.nz/massey/fms/Human%20Ethics/Documents/MUHEC%20Code%202015.pdf?CA6CFFFAA5150271FD193A0B0C56C5CF

McCall, G. J., & Simmons, J. L. (1966). *Identities and interactions: An examination of human associations in everday life.* New York, NY: The Free Press.

McIntosh, B. R., & Danigelis, N. L. (1995). Race, gender, and the relevance of productive activity for elders' affect. *The Journals of Gerontology, Series B, 50B*(4), S229-S239.

McKnight, P. E., & Kashdan, T. B. (2009). Purpose in life as a system that creates and sustains health and well-being: An integrative, testable theory. *Review of General Psychology, 13*(3), 242-251.

Mezuk, B., Bohnert, A. S. B., Ratliff, S., & Zivin, K. (2011). Job strain, depressive symptoms, and drinking behavior among older adults: Results from the health and retirement study. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences, 66B*(4), 426-434.

Michaelson, C., Pratt, M. G., Grant, A. M., & Dunn, C. P. (2014). Meaningful work: Connecting business ethics and organisation studies. *Journal of Business Ethics, 121*(1), 77-90.

Ministry for Culture and Heritage. (2017). *The Treaty in brief.* Retrieved from https://nzhistory.govt.nz/politics/treaty/treaty-faqs#IstheTreatystillvalid

Ministry of Health. (1999). *Taking the pulse: The 1996/97 New Zealand health survey*. Retrieved from http://www.moh.govt.nz/NoteBook/nbbooks.nsf/0/B5DEDA9A12DACE3B4C25677D00720599?opendocument:

Ministry of Health. (2016). *Healthy ageing strategy*. Retrieved from http://www.health.govt.nz/system/files/documents/publications/healthy-ageing-strategy.pdf:

Ministry of Social Development. (2001a). *Developing the Strategy*. Retrieved from http://www.msd.govt.nz/about-msd-and-our-work/publications-resources/planning-strategy/positive-ageing/developing-the-strategy.html

Ministry of Social Development. (2001b). *Positive ageing goals and key actions*. Retrieved from http://www.msd.govt.nz/about-msd-and-our-work/publications-resources/planning-strategy/positive-ageing/goals-and-actions.html

Ministry of Social Development. (2003). *A description of New Zealand's current retirement income framework.* Retrieved from http://www.treasury.govt.nz/publications/reviews-consultation/prg/background/prg-msd-dnzcrif.pdf

Ministry of Social Development. (2016a). New Zealand Superannuation. Retrieved from http://www.workandincome.govt.nz/products/a-z-benefits/nz-superannuation.html

Ministry of Social Development. (2016b). *The social report 2016: Te purongo oranga tangata*. Retrieved from http://socialreport.msd.govt.nz/documents/2016/msd-the-social-report-2016.pdf

Ministry of Social Development. (n.d.). *The New Zealand positive ageing strategy*. Retrieved from Retrieved from https://www.msd.govt.nz/what-we-can-do/seniorcitizens/positive-ageing/strategy/

Mittelman, M. S., Haley, W. E., Clay, O. J., & Roth, D. L. (2006). Improving caregiver well-being delays nursing home placement of patients with Alzheimer disease. *Neurology, 67*(9), 1592-1599.

Modo, I. V. O. (2005). Nigerian families. In B. N. Adams & J. Trost (Eds.), *Handbook of world families* (pp. 25-46). Thousand Oaks, CA: Sage.

Montepare, J. M. (2009). Subjective age: Toward a guiding lifespan framework. *International Journal of Behavioral Development, 33*(1), 42-46. doi:10.1177/0165025408095551

Moody, H. R. (2001). Productive aging and the ideology of old age. In N. Morrow-Howell, J. Hinterlong, & M. Sherraden (Eds.), *Productive aging: Concepts and challenges* (pp. 175-196). Baltimore, MD: John Hopkins University Press.

Moody, H. R., & Sasser, J. R. (2015). *Aging: Concepts and controversies*. Los Angeles, CA: Sage.

Moorfield, J. C. (2003). *Te aka online Maori dictionary*. Retrieved from http://maoridictionary.co.nz/search?keywords=tikanga

Moos, R. H., & Mitchell, R. E. (1982). Social network resources and adaptation: A conceptual framework. In T. A. Wills (Ed.), *Basic processes in helping relationships* (pp. 213-232). New York, NY: Academic Press.

Morgan, J., & Farsides, T. (2009). Measuring meaning in life. *Journal of Happiness Studies, 10*, 197-214.

Morrow-Howell, N., Hinterlong, J., Rozario, P. A., & Tang, F. (2003). Effects of Volunteering on the Well-Being of Older Adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 58*(3), S137-S145.

National Health Committee. (1998). *The social, cultural and economic determinants of health in New Zealand: Action to improve health*. Retrieved from www.health.govt.nz/system/files/documents/publications/det-health.pdf:

Nelson, T. D. (2015). Ageism. In T. D. Nelson (Ed.), *Handbook of prejudice, stereotyping, and discrimination* (2 ed., pp. 337-354). Retrieved from http://ebookcentral.proquest.com/lib/MASSEY/reader.action?docID=3570438&ppg=330.

New Zealand Treasury. (2003). *Fiscal impacts of population ageing in New Zealand*. Retrieved from http://www.treasury.govt.nz/publications/reviews-consultation/prg/background/prg-tsy-fipanz.pdf

New Zealand Work Research Institute. (2015a). *Managing an ageing workforce*. Retrieved from https://workresearch.aut.ac.nz/__data/assets/pdf_file/0015/34206/Ageing-Workforce-NZWRI_Feb15.pdf:

New Zealand Work Research Institute. (2015b). *Managing and ageing workforce.* Retrieved from http://www.workresearch.aut.ac.nz/Media-and-publications/all-publications

Ng, S. H. (1998). Social psychology in ageing world: Ageism and intergenerational relations. *Asian Journal of Social Psychology, 1*(1), 99-116. doi:10.1111/1467-839X.00007

Ng, S. H. (2002). Will families support their elders? Answers from across cultures. In T. D. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older adults* (pp. 295-309). Cambridge, MA: MIT Press.

Nolan, M., Grant, G., & Keady, J. (1996). *Understanding family care*. Buckingham, England: Open University Press.

Noonan, A. E., & Tennstedt, S. L. (1997). Meaning in caregiving and its contribution to caregiver well-being. *The Gerontologist, 37*(6), 785-794. doi:10.1093/geront/37.6.785

North, M. S., & Fiske, S. T. (2015). Modern attitudes toward older adults in the aging world: A cross-cultural meta-analysis. *Psychological Bulletin, 141*(5), 993-1021. doi:10.1037/a0039469

O'Connor, K., & Chamberlain, K. (1996). Dimensions of life meaning: A qualitative investigation at mid-life. *British Journal of Psychology, 87*(3), 461-477.

O'Donnell, M. B., Bentele, C. N., Grossman, H. B., Le, Y., Jang, H., & Steger, M. F. (2014). You, me and meaning: An integrative review of connections between relationships and meaning in life. *Journal of Psychology in Africa, 24*(1), 44-50.

OECD. (2017a). LFS by sex and age indicators: Employment population ratios. Retrieved from http://stats.oecd.org/Index.aspx?QueryId=64196#

OECD. (2017b). The Organisation for Economic Co-operation and development (OECD). Retrieved from http://www.oecd.org/about/

Office for the Community and Voluntary Sector. (2007). *Mahi Aroha: Māori perspectives on volunteering and cultural obligations*. Retrieved from http://whanauoraresearch.co.nz/files/formidable/mahi-aroha1.pdf

Okun, M. A., & Schultz, A. (2003). Age and motives for volunteering: Testing hypotheses derived from socioemotional selectivity theory. *Psychology and Aging, 18*(2), 231-239. doi:10.1037/0882-7974.18.2.231

Olshansky, S. J., & Carnes, B. A. (2001). *The quest for immortality: Science at the frontiers of aging*. New York, NY: Norton.

Orange, C. (2012). *Treaty of Waitangi: Honouring the treaty - 1940 to 2000s*. Retrieved from https://teara.govt.nz/en/treaty-of-waitangi/page-7

Ota, H., Giles, H., & Gallois, C. (2002). Perceptions of younger, middle-aged, and older adults in Australia and Japan: stereotypes and age group vitality. *Journal of Intercultural Studies, 23*(3), 253-266.

Papathomas, A., & Lavallee, D. (2012). Narrative constructions of anorexia and abuse: An athlete's search for meaning in trauma. *Journal of Loss & Trauma, 17*(4), 293-318. doi:10.1080/15325024.2011.616740

Park, C. L. (2007). Religiousness/spirituality and health: A meaning systems perspective. *Journal of Behavioral Medicine, 30*, 319-328.

Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin, 136*(2), 257-301.

Park, C. L., & Folkman, S. (1997). Meaning in the context of stress and coping. *Review of General Psychology, 1*(2), 115-144. doi:10.1037/1089-2680.1.2.115

Park, C. L., Malone, M. R., Suresh, D. P., Bliss, D., & Rosen, R. I. (2008). Coping, meaning in life, and quality of life in congestive heart failure patients. *Quality of Life Research, 17*, 21-26.

Pearlin, L. I. (1985). Social structure and processes of social support. In S. Cohen & S. L. Syme (Eds.), *Social support and health* (pp. 43-60). Orlando, FL: Academic Press.

Pearlin, L. I., Mullan, J. T., Semple, S. J., & Skaff, M. M. (1990). Caregiving and the stress process: An overview of concepts and their measures. *The Gerontologist, 30*(5), 583-594.

Peeters, M. C. W., Buunk, B. P., & Schaufeli, W. B. (1995). Social interactions and feelings of inferiority among correctional officers: A daily event-recording approach. *Journal of Applied Social Psychology*(12), 1073-1089.

Pereti, P. O., & Wilson, C. (1975). Voluntary and involuntary retirement of aged males and their effect of emotional satisfaction, usefulness, self-image, emotional stability, and interpersonal relationships. *International Journal Of Aging & Human Development, 6*(2), 131-138.

Phelan, A. (2010). Socially constructing older people: Examining discourses which can shape nurses' understanding and practice. *Journal of Advanced Nursing, 67*(4), 893-903.

Phillipson, C. (2013). *Ageing*. Cambridge, England: Polity Press.

Pinquart, M. (2002). Creating and maintaining purpose in life in old age: A meta-analysis. *Ageing International, 27*(2), 90-114.

Pinquart, M., & Sörensen, S. (2003). Differences between caregivers and noncaregivers in psychological health and physical health: A meta-analysis. *Psychology and Aging, 18*(2), 250-267. doi:10.1037/0882-7974.18.2.250

Prager, E. (1996). Exploring personal meaning in an age-differentiated Australian sample: Another look at the Sources of Meaning Profile (SOMP). *Journal of Aging Studies, 10*(2), 117-137.

Pyszczynsi, T., Greenberg, J., Solomon, S., Arndt, J., & Schimel, J. (2004). Why do people need self-esteem? A theoretical and empirical review. *Psychological Bulletin, 130*(3), 435-468.

Quinn, C., Clare, L., McGuinness, T., & Woods, R. T. (2012). The impact of relationships, motivations, and meanings on dementia caregiving outcomes. *International Psychogeriatrics, 24*(11), 1816-1826. doi:10.1017/S1041610212000889

Quinn, C., Clare, L., & Woods, R. T. (2010). The impact of motivations and meanings on the wellbeing of caregivers of people with dementia: a systematic review. *International Psychogeriatrics, 22*(1), 43-55. doi:10.1017/S1041610209990810

Quinn, C., Clare, L., & Woods, R. T. (2012). What predicts whether caregivers of people with dementia find meaning in their role? *International Journal of Geriatric Psychiatry, 27*(11), 1195-1202. doi:10.1002/gps.3773

Raynor, B. (2015). Ageism In Action? Ageism Inaction! *Generations, 39*(3), 58-63.

Reker, G. T. (1994). Logotheory and logotherapy: Challenges, opportunities, and some empirical findings. *International Forum for Logotherapy, 17*, 47-55.

Reker, G. T., & Fry, P. S. (2003). Factor structure and invariance of personal meaning measures in cohorts of younger and older adults. *Personality and Individual Differences, 35*(5), 977-993.

Reker, G. T., & Wong, P. T. P. (1988). Aging as an individual process: Toward a theory of personal meaning. In J. E. Birren & V. L. Bengtson (Eds.), *Emergent theories of aging* (pp. 214-246). New York, NY: Springer.

Reker, G. T., & Wong, P. T. P. (2012). Personal meaning in life and psychosocial adaptation in the later years. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, resaerch, and applications*. New York, NY: Routledge.

Reker, G. T., & Woo, L. C. (2011). Personal meaning orientations and psychosocial adaptation in older adults. *Sage Open*. doi:10.1177/2158244011405217

Resnick, B., & Parker, R. (2001). Simplified scoring and psychometrics of the revised 12-Item Short Form Health Survey. *Outcomes Management for Nursing Practice, 5*(4), 161-166.

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behaviour, 30*, 91-127.

Roud, H., Keeling, S., & Sainsbury, R. (2006). Using the COPE assessment tool with informal carers of people with dementia in New Zealand. *The New Zealand Medical Journal, 119*(1237), 1175-1187.

Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist, 37*(4), 433-440.

Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass, 5*(6), 359-371.

Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry, 9*(1), 1-28.

Salagame, K. K. (2015). Meaning and well-being: Indian perspectives. *Journal of Constructivist Psychology, 30*(1), 63-68. doi: 10.1080/10720537.2015.1119087

Schaefer, C., Coyne, J. C., & Lazarus, R. S. (1981). The health-related functions of social support. *Journal of Behavioral Medicine, 4*(4), 381-406. doi:10.1007/BF00846149

Schnell, T. (2009). The Sources of Meaning and Meaning in Life Questionnaire (SoMe): Relations to demographics and well-being. *Journal of Positive Psychology, 4*(6), 483-499. doi:10.1080/17439760903271074

Schnell, T. (2011). Individual differences in meaning-making: Considering the variety of sources of meaning, their density and diversity. *Personality and Individual Differences, 51*(5), 667-673. doi:http://dx.doi.org/10.1016/j.paid.2011.06.006

Schnell, T., & Hoof, M. (2012). Meaningful commitment: Finding meaning in volunteer work. *Journal of Beliefs and Values, 33*(1), 35-53.

Schnell, T., Höge, T., & Pollet, E. (2013). Predicting meaning in work: Theory, data, implications. *Journal of Positive Psychology, 8*(6), 543-554.

Schwingel, A., Niti, M. M., Tang, C., & Ng, T. P. (2009). Continued work employment and volunteerism and mental well-being of older adults: Singapore longitudinal ageing studies. *Age and Ageing, 38*(5), 531-537.

Scogin, F., Welsh, D., Hanson, A., Stump, J., & Coates, A. (2005). Evidence-based psychotherapies for depression in older adults. *Clinical Psychology: Science and Practice, 12,* 222-237.

Shao, J., Zhang, Q., Lin, T., Shen, J., & Li, D. (2014). Well-being of elderly stroke survivors in Chinese communities: Mediating effects of meaning in life. *Aging and Mental Health, 18*(4), 435-443. doi:10.1080/13607863.2013.848836

Shaw, B. A., Krause, N., Laing, J., & Bennett, J. (2007). Tracking changes in social relations throughout late life. *Journal of Gerontology, 62B*(2), 90-99.

Shek, D. T. L. (2012). Life meaning and purpose in life among Chinese adolescents: What can we learn from Chinese studies in Hong Kong? In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and application* (pp. 335-355). New York, NY: Routledge.

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology, 76*(3), 482-497

Sherman, N. E., Michel, R., Rybak, C., Randall, G. K., & Davidson, J. (2011). Meaning in life and volunteerism in older adults. *ADULTSPAN Journal, 10*(2), 78-90.

Shim, B., Barroso, J., & Davis, L. L. (2012). A comparative qualitative analysis of stories of spousal caregivers of people with dementia: Negative, ambivalent, and positive experiences. *International Journal of Nursing Studies, 49*(2), 220-229. doi:http://dx.doi.org/10.1016/j.ijnurstu.2011.09.003

Shrira, A., Bodner, E., & Palgi, Y. (2014). The interactive effect of subjective age and subjective distance-to-death on psychological distress of older adults. *Aging and Mental Health, 18*(8), 1066-1070. doi:10.1080/13607863.2014.915925

Siegrist, J., & Marmot, M. G. (Eds.). (2006). *Social inequalities in health: New evidence and policy implications*. Oxford, England: Oxford University Press.

Silver, R. L., & Wortman, C. B. (1980). Coping with undesirable life events. In J. Garber & M. E. P. Seligman (Eds.), *Human helplessness: Theory and applications* (pp. 279-340). New York, NY: Academic Press.

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*(3), 417-453.

Smith, B. W., & Zautra, A. J. (2004). The role of purpose in life in recovery from knee surgery. *International Journal of Behavioral Medicine, 11*(4), 197-202.

Smith, J. M. (2012). Toward a better understanding of loneliness in community-dwelling older adults. *Journal of Psychology, 146*(3), 293-311.

Sommer, K. L., Williams, K. D., Ciarocco, N. J., & Baumeister, R. F. (2001). When silence speaks louder than words: Explorations into the intrapsychic and interpersonal consequences of social ostracism. *Basic and Applied Social Psychology, 23*(4), 225-243. doi:10.1207/153248301753225694

Song, L., Son, J., & Lin, N. (2014). Social support. In J. Scott & P. J. Carrington (Eds.), *The sage handbook of social network analysis* (pp. 116-128). doi:10.4135/9781446294413

Southwick, S. M., Gilmartin, R., McDonough, P., & Morrissey, P. (2006). Logotherapy as an adjunctive treatment for chronic combat-related PTSD: A meaning-based intervention. *American Journal of Psychotherapy, 60*(2), 161-174.

Statistics New Zealand. (2000). *Population ageing in New Zealand*. Retrieved from http://www.stats.govt.nz/browse_for_stats/people_and_communities/older_people/pop-ageing-in-nz.aspx

Statistics New Zealand. (2006). *Demographic aspects of New Zealand's ageing population*. Retrieved from Retrieved from http://www.stats.govt.nz/browse_for_stats/people_and_communities/older_people/demographic-aspects-nz-ageing-population.aspx:

Statistics New Zealand. (2007a). *New Zealand's 65+ population: A statistical volume*. Retrieved from Wellington, New Zealand: Author:

Statistics New Zealand. (2007b). *Planning for the future: Structural change in New Zealand's population, labour force, and productivity*. Retrieved from http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/structural-change-nz-population-productivity.aspx

Statistics New Zealand. (2009). *Disability and informal care in New Zealand in 2006: Results from the New Zealand Disability Survey*. Retrieved from Wellington, Author:

Statistics New Zealand. (2013a). *Estimated resident population (ERP), subnational population by ethnic group, age, and sex, at 30 June 1996, 2001, 2006, and 2013*. Retrieved from http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7512#

Statistics New Zealand. (2013b). *New Zealand General Social Survey: 2012*. Retrieved from http://www.stats.govt.nz/browse_for_stats/people_and_communities/Households/nzgss_HOTP2012.aspx

Statistics New Zealand. (2013c). *Work and unpaid activities*. Retrieved from http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-65-plus/work-unpaid-activities.aspx

Statistics New Zealand. (2017a). *Household labour force survey: June 2017 quarter*. Retrieved from http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/LabourMarketStatistics_HOTPJun17qtr.aspx

Statistics New Zealand (2017b). Labour force will grow and age. Retrieved from https://www.stats.govt.nz/news/labour-force-will-grow-and-age

Statistics New Zealand. (2017c). National ethnic population projections, characteristics, 2013(base)-2038. Retrieved from http://nzdotstat.stats.govt.nz/wbos/Index.aspx#

Stavrova, O., & Luhmann, M. (2016). Social connectedness as a source and consequence of meaning in life. *The Journal of Positive Psychology, 11*(5), 470-479.

Steger, M. A., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *Journal of Positive Psychology, 4*(1), 43-52. doi:10.1080/17439760802303127

Steger, M. F. (2012). Experiencing meaning in life: Optimal functioning at the nexus of well-being, psychopathology, and sprituality. In P. T. P. Wong (Ed.), *The human quest for meaning* (2 ed., pp. 165-184). New York, NY: Routledge.

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The Work and Meaning Inventory (WAMI). *Journal of Career Assessment., 20*(3), 322-337.

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The Work and Meaning Inventory (WAMI). *Journal of Career Asssessment, 20*(3), 322-337.

Steger, M. F., Fitch-Martin, A. R., Donnelly, J., & Rickard, K. M. (2015). Meaning in life and health: Proactive health orientation links meaning in life to health variables among American undergraduates. *Journal of Happiness Studies, 16*(583-597).

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology, 53*(1), 80-93. doi:10.1037/0022-0167.53.1.80

Steger, M. F., Kawabata, Y., Shimai, S., & Otake, K. (2008). The meaningful life in Japan and the United States: Levels and correlates of meaning in life. *Journal of Research in Personality, 42*, 660-678. doi:10.1016/j.jrp.2007.09.003

Steger, M. F., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *Journal of Positive Psychology, 4*(1), 43-52. doi:10.1080/17439760802303127

Steverink, N., & Lindenberg, S. (2006). Which social needs are important for subjective well-being? What happens to them with aging? *Psychology and Aging, 21*(2), 281-290.

Stillman, T. F., Baumeister, R. F., Lambert, N. M., Crescioni, A. W., DeWall, C. N., & Fincham, F. D. (2009). Alone and without purpose: Life loses meaning following social exclusion. *Journal of Experimental Social Psychology, 45*(4), 686-694. doi:http://dx.doi.org/10.1016/j.jesp.2009.03.007

Strawbridge, W. J., Wallhagen, M. I., Shema, S. J., & Kaplan, G. A. (1997). New burdens or more of the same? Comparing grandparent, spouse, and adult-child caregivers. *The Gerontologist, 37*(4), 505-510.

Stroebe, W. (2011). *Social psychology and health* (3 Ed.). Maidenhead, England: Open Press University.

Stroebe, W., & Stroebe, M. S. (1987). *Bereavement and health: The psychological and physical consequences of partner loss*. Cambridge, England: Cambridge University Press.

Stuart-Hamilton, I. (2012). *Psychology of ageing : An Introduction* Retrieved from http://ezproxy.massey.ac.nz/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cat00245a&AN=massey.b2781194&site=eds-live&scope=site

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6 ed.). Boston, MA: Pearson.

Tajfel, H. (1978). *Social categorization, social identity and social comparison*. London, England: Academic Press.

Takkinen, S., & Ruoppila, I. (2001). Meaning in life in three samples of elderly persons with high cognitive functioning. *International Journal of Aging and Human Development, 53*(1), 51-73.

Thane, P. (2000). *Old age in English history: Past experiences, present issues*. Oxford, England: Oxford University Press.

Thoits, P. A. (1982). Conceptual, methodological, and theoretical problems in studying social support as a buffer against life stress. *Journal of Health and Social Behaviour, 23*(2), 145-159.

Thoits, P. A. (1983). Multiple identities and psychological well-being: A reformulation and test of the social isolation hypothesis. *American Sociological Review, 48*, 174-187.

Thoits, P. A. (2012). Role-identity salience, purpose and meaning in life, and well-being among volunteers. *Social Psychology Quarterly, 75*(4), 360-384.

Thomas, P. A. (2010). Is it better to give or to receive? Social support and the well-being of older adults. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences, 65B*(3), 351-357. doi:geronb/gbp113

Tomer, A. (2014). Meaning in terror managment theory. In A. Batthyany & P. Russo-Netzer (Eds.), Meanings in positive and existential psychology (pp. 65-79). doi:10.1007/978-1-4939-0308-5_5,

Tornstam, L. (1997). Gerotranscendence: The contemplative dimension of aging. *Journal of Aging Studies, 11*(2), 143-154.

Toussaint, L. L., Kalayjian, A., Herman, K., Hein, A., Maseko, N., & Diakonova-Curtis, D. (2017). Traumatic stress symptoms, forgiveness, and meaning in life in four traumatized regions of the world. *International Perspectives in Psychology: Research, Practice, Consultation, 6*(1), 5-16. doi:10.1037/ipp0000064

Towers, A. (2007). *Health, Work and Retirement Survey summary report for the 2006 data wave: Methodology*. Retrieved from http://www.massey.ac.nz/massey/fms/Colleges/College%20of%20Humanities%20and%20Social%20Sciences/Psychology/HART/surveys/methodology_towers.pdf?B0EC45CD5658D967B62E69202C5DAA94:

Towers, A., & Noone, J. (2007). *Health, Work, and Retirement Study: Summary report for the 2006 data wave.* Retrieved from http://www.massey.ac.nz/massey/fms/Colleges/College%20of%20Humanities%20and%20Social%20Sciences/Psychology/HART/surveys/Chapter%202_Our%20Sample.pdf?1B81FFAB8DA124A54DAE03216116D923

Twenge, J. M., Catanese, K. R., & Baumeister, R. F. (2003). Social exclusion and the deconstructed state: Time perception, meaninglessness, lethargy, lack of

emotion, and self-awareness. *Journal of Personality and Social Psychology, 85*(3), 409-423.

United Nations. (2009). *World populaiton ageing*. Retrieved from http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf

United Nations. (2013). *World population ageing 2013.* Retrieved from http://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2013.pdf

Van Orden, K. A., Bamonti, P. M., King, D. A., & Duberstein, P. R. (2012). Does perceived burdensomeness erode meaning in life among older adults? *Aging and Mental Health, 16*(7), 855-860. doi:10.1080/13607863.2012.657156

Van Willigen, M. (2000). Differential benefits of volunteering across the life course. *Journals of Gerontology Series B - Psychological Sciences and Social Sciences, 55*(5), S308-S318.

Vogel, D. L., & Wei, M. (2005). Adult attachment and help-seeking intent: The mediating roles of psychological distress and perceived social support. *Journal of Counseling Psychology, 52*(3), 347-357.

Walker, A. J., Pratt, C. C., & Shin, H.-Y. (1990). Motives for parental caregiving and relationship quality. *Family Relations, 39*, 51-56. doi:10.2307/584948

Walker, R. V., Powers, S. M., & Bisconti, T. L. (2016). Positive aspects of the caregiving experience: Finding hope in the midst of the storm. *Women and Therapy, 39*(3), 354-370.

Walker, T. (2017). Whanau - Maori and family. Retrieved from https://teara.govt.nz/en/whanau-maori-and-family

Wang, Y. H., & Liao, H. C. (2015). Construction and validation of a meaning in life scale in the Taiwanese cultural context. *Psychological Reports, 117*(2), 437-451. doi:10.2466/08.07.PR0.117c19z4

Ware, J. E., Kosinki, M., & Keller, S. D. (1996). A 12-item short form health survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care, 34*(3), 220-233.

Weinstein, N., Ryan, R. M., & Deci, E. L. (2012). Motivation, meaning, and wellness: A self-determination perspective on the creating and internalisation of personal meanings and life goals. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and applications* (pp. 81-106). New York, NY: Routledge.

Weiss, R. (1974). The provisions of social relationships. In Z. Rubin (Ed.), *Doing unto others: Joining, molding, conforming, helping, loving* (pp. 17-26). Englewood Cliffs, NJ: Prentice Hall.

Whaanga, M. (2013). Marae management - te whakahaere marae. Retrieved from https://teara.govt.nz/en/marae-management-te-whakahaere-marae

White, C. A. (2004). Meaning and its measurement in psychosocial oncology. *Psycho-Oncology, 13*(7), 468-481.

Williams, K. D. (2001). *Ostracism: The power of silence*. New York, NY: Guilford Press.

Williamson, G. M. (2001). Aging well. In S. J. Lopez & C. R. Snyder (Eds.), *Handbook of Positive Psychology* (pp. 676-686). New York, NY: Oxford University Press.

Wilson, G. (2000). *An ageing world Understanding old age: Critical and global perspectives.* doi:10.4135/9781446218495

Windsor, T. D., Anstey, K. J., & Rodgers, B. (2008). Volunteering and psychological well-being among young-old adults: How much is too much? *Gerontologist, 48*(1), 59-70.

Wong, P. T. P. (1998). Implicit theories of meaninful life and the development of the personal meaning profile. In P. T. P. Wong & P. S. Fry (Eds.), *The human quest for meaning: A handbook of psychological research and clinical applications* (pp. 111-140). Mahwah, NJ: Lawrence Erlbaum Associates.

Wong, P. T. P. (2012). From logotherapy to meaning-centered counseling and therapy. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and application* (2 ed., pp. 619-647). New York, NY: Routledge.

Wong, P. T. P. (2014). Viktor Frankl's meaning-seeking model and positive psychology. In A. Batthyany & P. Russo-Netzer (Eds.), Meaning in positive and existential psychology (pp. 149-184). doi:10.1007/978-1-4939-0308-5_10,

Woo, C. R. S., & Brown, E. J. (2013). Role of meaning in the prediction of depressive symptoms among trauma-exposed and nontrauma-exposed emerging adults. *Journal of Clinical Psychology, 69*(12), 1269-1283. doi:10.1002/jclp.22002

World Health Organisation. (2002). *Active ageing: A policy framework.* Retrieved from http://apps.who.int/iris/bitstream/10665/67215/1/WHO_NMH_NPH_02.8.pdf

World Health Organisation. (2015). *Ageing and health*. Retrieved from Retrieved from http://www.who.int/mediacentre/factsheets/fs404/en/:

World Health Organisation. (2016). *Multisectoral action for a life course approach to healthy ageing: draft global strategy and plan of action on ageing and health*. Retrieved from http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_17-en.pdf?ua=1:

Worrall, J. (2009). *Grandparents and whanau/extended families raising kin children in Aotearoa/New Zealand: A view over time*. Retrieved from https://www.parliament.nz/resource/en-nz/50SCSS_EVI_00DBHOH_BILL11958_1_A384025/480d2295d3b357594780ddf807b262ad40e4467a

Xin, Z., Cai, X., Yanjun, G., Xuan, S., Melloy, R., Fei, W., . . . Jin, X. (2016). Attitudes toward older adults: A matter of cultural values or personal values? *Psychology & Aging, 31*(1), 89-100. doi:10.1037/pag0000068

Yalom, I. D. (1980). *Existential Psychology*. New York, NY: Basic Books.

Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well-being. *British Journal of Psychology, 83*(1), 133-145.

Appendix I

Information Letter to Study Participants

<Mailing_Name> **ICC0001**
<Mailing_address_1>
<Mailing_address_2>
<Mailing_address_3>

Dear **<Mailing_Name>**

You are one of 1,900 valued people from around the country who have taken part in NZLSA (New Zealand Longitudinal Study of Ageing) and were also part of the original HWR study (Health, Work, and Retirement Study) in 2006 and 2008. This is an invitation to take part in the next survey in 2013 which is a continuation of these studies. As a long time participant in the longitudinal study, your information is particularly valuable.

This year's study is called **The Participation of Older People: Independence, Contribution, Connection**. It explores health (physical & mental) and wellbeing, and some new topics including: what constitutes a 'meaningful life', your lifestyle plans, your employment, and your experiences of digital media. There is a separate supplementary questionnaire for those who have cared for someone with a long term-illness, disability or frailty, within the last twelve months. You are not obliged to answer any questions that make you uncomfortable, but please answer all that you can.

If you agree to participate again, please complete the enclosed questionnaire and return in the enclosed free post envelope;
OR you may complete the questionnaire on-line by emailing Brendan at hart@massey.ac.nz. In the body of the email please request access to the on-line questionnaire and include your reference number which you will find at the top right of this letter. We will send you the on-line link by reply email

In addition we are including a new study of spouses/partners in this year's survey. If you have a spouse or partner living with you, who is interested, please pass on the enclosed information letter for their consideration. If you do not have a spouse or partner, please just dispose of this extra letter and we apologise for the bother.

Remember that all information that you give is completely confidential, and will be used only for the purposes of this study. Your questionnaires will not be linked with your name. It will not be possible to identify individuals in any reports of the results, and questionnaires will be kept in a locked store room and will only be seen by the researchers. To ensure confidentiality, the questionnaires will be destroyed 10 years after the completion of the study.

What are my rights as a participant in this study?
You are under no obligation to accept this invitation. Completion and return of the questionnaire implies consent. If you decide to participate, you have the right to:

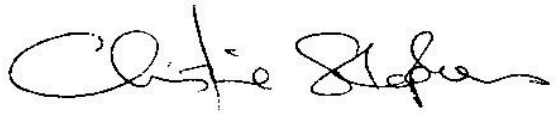
- Decline to answer any particular question;
- Withdraw from the study at any time;
- Ask any questions about the study at any time during participation;
- Provide information on the understanding that your name will not be used;
- Be given access to a summary of the project findings when it is concluded.

Please contact our research officer if you have further questions about this study:
Mr Brendan Stevenson
School of Psychology
Massey University
Private Bag 11-222
Palmerston North
Ph: **0800 100 134**
Email: **hart@massey.ac.nz**

I am writing as one of the principle researchers in the School of Psychology, Massey University. Other team members are Dr Fiona Alpass, Associate Professor; Mr Brendan Stevenson, Research Officer, and Ms Vicki Beagley, Research Officer. Dr Sally Keeling from the Department of Medicine at Otago University is also part of the research team. We welcome questions about the study and you will find our contact details below.

Thank you for your very valued participation in this longitudinal study.

Yours sincerely



Professor Christine Stephens
School of Psychology
Massey University
Phone: 0800 100 134 Email: hart@massey.ac.nz

Statement of Ethical Approval
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 13/30. If you have any concerns about the conduct of the research, please contact Dr Nathan Matthews, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 80877, email humanethicsouthb@massey.ac.nz

Appendix II

Research Case Study

Work, Social Support, and Meaning in Life in Older Adulthood

This case study was completed during the period of an internship as part of a Doctorate of Clinical Psychology, and represents the work of Jessie Smith under the supervision of Fiona Alpass.

Name: Jessie Smith, Intern Psychologist, Massey University Psychology Clinic

Supervisor: Fiona Alpass, Professor of Psychology, Massey University Manawatū

Abstract

Background and Objectives: Meaning in life (MIL) is associated with enhanced well-being but little is known about sources of MIL for older adults. As an increasing proportion of older adults are engaged in employment and volunteer roles, this study aimed to examine the associations between MIL, employment, and volunteering among older adults. Additionally, the study sought to examine what it is about these roles that may facilitate MIL. Specifically, whether giving social support would mediate the relationships between employment, volunteering, and MIL.

Design and Methods: This research was secondary data analysis of a large sample of community-dwelling older adults in Aotearoa New Zealand, primarily using linear hierarchical regression.

Results: Participation in paid employment was not associated with MIL. Volunteering was associated with higher MIL among older adults and this relationship was mediated by the provision of social support.

Discussion and Implications: Volunteering and other roles which present opportunities to provide support for others may be particularly effective for enhancing MIL among older adults. Further research is needed to investigate how different aspects of employment relate to MIL in order to better understand how employment may be structured to contribute to MIL and how MIL might be promoted among older adults.

Literature Review

Population ageing has stimulated increased focus on the maintenance and enhancement of well-being in later life. Research into the well-being of older adults has predominantly focused on social and economic resources, physiological and environmental factors, and lifestyle characteristics (Lloyd, Kendall, Murray, & Starr, 2016). While these domains are crucial, the existential needs of older adults are often overlooked (Lloyd et al., 2016). Meaning in life (MIL) is an existential issue which has received increased attention as the implications of meaningfulness have become more evident (Steger, 2012). The present study examined whether older adults' participation in employment and voluntary work was associated with their sense of MIL and whether an individual's perceptions of being needed and relied on for the well-being of others mediates these relationships.

Meaning in Life

Frankl (1959) proposed that a search for meaning is a universal and primary motivator for human beings. Martela and Steger (2016) define MIL as "the web of connections, interpretations, aspirations, and evaluations that (1) make our experiences comprehensible, (2) direct our efforts toward desired futures, and (3) provide a sense that our lives matter and are worthwhile" (p. 538). From this definition, MIL may be understood as comprising three interacting components: the individual's coherent understanding of their lives and experiences (coherence), direction for actions (purpose), and feeling their lives are worthwhile and matter (significance).

A growing body of literature suggests that experiencing MIL is highly beneficial for older adults and it has been associated with better physical, emotional, functional, and social domains of well-being (Haugan, 2014), higher subjective well-being, and lower levels of depression (Pinquart, 2002; Steger, Oishi, & Kashdan, 2009). Older adults with a strong sense of MIL have been found to have lower levels of mortality even when social support and religious attendance are controlled for (Krause, 2009). MIL may also play a role in buffering the effects of stress among older adults (Krause, 2007) and in psychosocial adaptation in the face of negative life events (Reker & Wong, 2012). Finally, MIL may protect against late-life suicidal ideation (Heisel & Flett, 2016). It is therefore important to understand how MIL might be maintained and enhanced among older adults.

A range of activities, experiences, and goals have been found to contribute to a sense of MIL (O'Connor & Chamberlain, 1996). Commonly identified sources of MIL include interpersonal relationships, life work, religious/spiritual involvement, material possessions, achievement, health, self-transcendence, self-acceptance, political causes, and leisure activities (Bar-Tur, Savaya, & Prager, 2001; Debats, 1999; O'Connor & Chamberlain, 1996; Schnell, 2009). Among older adults, family or interpersonal relationships (Debats, 1999) and self-transcendence, specifically, generativity (doing or creating things that are valued beyond one’s death; Schnell, 2011), are frequently endorsed as important sources of MIL for older adults.

Another life domain commonly endorsed as a source of MIL is work (Debats, 1999; Delle Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2011). The role of work is receiving increased attention in the field of gerontology, particularly work in the form of

volunteering and employment (Choi, Tang, Kim, & Turk, 2016; Gonzales, Matz-Costa, & Morrow-Howell, 2015; Hinterlong, 2008). However, there is little research examining the impact of employment and volunteering on MIL among older adults specifically.

Work, Social Support, and Meaning

The proportion of older adults in paid employment worldwide is increasing (OECD, 2017). This trend is driven by individual, organisational, and societal factors such as job satisfaction, flexible work arrangements, and population ageing (Hedge, Borman, & Lammlein, 2006). Similarly, a substantial proportion of older adults engage in volunteer work (Department of Labor, 2016) and the demand for older adult volunteers will likely increase as the proportion of older adults increases, barriers such age related stereotypes are challenged, and the skills and knowledge of older adults are recognise (Morrow-Howell, 2010).

There are theoretical reasons for hypothesising that employment and volunteering may foster MIL. Volunteering and employment may afford order and structure (coherence) and an avenue for formulating and pursing goals and living one's values (purpose; Martela & Steger, 2016). The contributions made through these roles may foster a sense that one's life is worthwhile (significance). Employment and volunteering also provide social roles and in turn a system of values and norms to direct behaviour (Thoits, 1983). Of further importance, societal approval of role associated behaviours provides reassurance that the behaviour is, in some sense, good and right (McCall & Simmons, 1966). The perception of one's actions as good, right, and justifiable is argued to be essential for an individual to perceive their actions are worthwhile, a critical aspect of

MIL (Baumeister, 1991). Finally, individual or collective accomplishment in the workplace and work role may foster self-esteem (Rosso, Dekas, & Wrzesniewski, 2010). As an assessment of self-worth, self-esteem is intimately linked to the evaluative (significance) component of MIL.

In addition to theoretical arguments, previous research also suggests employment and volunteering may contribute to a sense of MIL among older adults. Volunteers experience significantly more MIL than non-volunteers in younger (Schnell & Hoof, 2012) and older samples (Sherman, Michel, Rybak, Randall, & Davidson, 2011) and engagement in volunteering has been successfully used as an intervention to enhance meaningfulness (Southwick, Gilmartin, McDonough, & Morrissey, 2006). Experiencing meaning in one's employment has been found to be associated with greater MIL (Steger & Dik, 2009) and to moderate the relationship between MIL and age. Though these studies demonstrate links between MIL and volunteering and employment, they do not clarify the mechanisms by which MIL is enhanced.

A possible mechanism through which these roles operate to promote MIL is social support. The benefits of receiving social support have been extensively researched (Chen, 2013; Uchino, 2004), including the potential of social support to enhance MIL (Lambert et al., 2013). Although less widely studied, research also confirms the benefits of giving support to others including reduced mortality (Brown, Nesse, Vinokur, & Smith, 2003) and morbidity (Brown, Consedine, & Magai, 2005). Further, Gruenewald, Karlamangla, Greendale, Singer, and Seeman (2007) found that perceptions of usefulness, not just the act of giving, where associated with lower levels of disability. While this research suggests that giving support contributes to well-being, it would

appear empirical research has not yet examined whether giving support also contributes to MIL.

In his Social Provisions Theory, Weiss (1974) suggests that giving support, and more specifically, perceiving oneself to be needed by others, is crucial for experiencing meaning. Weiss proposes that different relationships provide different relational necessities or 'social provisions' and identified the six provisions of attachment, social integration, reassurance of worth, guidance, reliable alliance, and opportunity for nurturance. Weiss considered these provisions essential for personal adjustment, for the avoidance of loneliness, and for the individual to feel adequately supported. The absence of each provision is associated with specific cognitive and affective outcomes. Uniquely, Weiss recognised the importance of providing support (opportunity for nurturance) which involves being responsible for the care of other individuals and a sense one is needed and relied on for the well-being of others. Weiss proposed that meaninglessness occurs in the absence of an opportunity for nurturance.

The Current Study

Despite the existing evidence supporting a positive relationship between volunteering and MIL and employment and MIL, there are several gaps in the literature. First, while employment is associated with greater MIL (Steger & Dik, 2009), the relationship between employment and MIL among older adults has yet to be investigated. Although a positive relationship has been found between volunteering and MIL among older adults (Sherman et al., 2011), this study used only a small and non-representative sample which was not selected at random. Second, there is little research examining the mechanisms by which volunteering and employment may enhance MIL. The reception of social support is one such pathway but an unexamined alternative is that the

opportunity to provide support, and specifically, the sense that one is needed for the well-being of others, may enhance MIL.

The aim of the present study was to address these gaps in the literature by examining (1) whether older adults in paid employment experienced greater MIL than those not in paid employment, (2) whether participation in voluntary work was associated with greater MIL among older adults, and (3) whether these relationships were mediated by opportunity for nurturance. It was hypothesised that involvement in paid employment and volunteering would be associated with higher MIL and that opportunity for nurturance would mediate these relationships.

Design and Methods

Participants and Procedures

Data for this study was drawn from the New Zealand Health, Work, and Retirement (HWR) study, a nationwide longitudinal study of community dwelling older persons (Towers, Stevenson, Breheny, & Allen, 2015). The HWR was implemented with the aim of examining health and wellbeing in this population. The project was initiated by the Massey University Health and Ageing Research Team (HART) and continued in collaboration with other organisations and research units in New Zealand.

The original sample for the HWR study (Wave 1), taken in 2006, consisted of adults aged 55 and over and was randomly selected from the New Zealand electoral roll[10]. An over-sample of individuals who identified as being of Māori descent was taken to ensure this important sub-group was adequately represented. Data was collected by postal survey and a total of 6,662 surveys were returned, a response rate of 53%. Of these, 3282 indicated they would be willing to participate in a longitudinal study. The study continued biennially with an off wave survey in 2013. Analyses in the current study used data from participants of the original sample who participated in both Wave 5 (2013) and Wave 6 (2014) of the HWR study and who were aged 60 or older at Wave 5 (n = 1232). Those individuals in nursing homes, dependent care, or prison were excluded to ensure a community based sample.

Measures

Meaning in Life. Meaning in life was assessed using the shortened version of the Krause's (2004) Meaning in Life scale for use with older adults. The scale consists of 8 items assessing four dimensions of meaning: having values, sense of purpose, goals, and the ability to reconcile the past (Krause, 2007). An example item is: '*I have a sense of direction and purpose in my life*'. Responses are made on scale of 1 (strongly disagree) to 5 (strongly agree). Items are summed to give an overall score ranging from 8 to 40 with higher scores indicating a deeper sense of meaning in life. The scale has construct validity (Krause, 2004) and has demonstrated internal consistency in a sample of older adults ($\alpha = 0.80$; Krause, 2007). In the current study, Cronbach's alpha coefficient was .90.

[10] The electoral roll is a register of persons who are eligible and registered to vote. As enrolment is compulsory and compliance is high, the electoral roll is highly representative of New Zealand adults with 96% of New Zealanders aged 18 and over registered on the roll as at March 2007.

Opportunity for Nurturance. Opportunity for nurturance was assessed using the opportunity for nurturance sub-scale of the Social Provisions Scale (SPS; Cutrona, Russell, & Rose, 1986). The sub-scale consists of four items, two of which each describe the absence and presence of opportunity for nurturance. Participants indicate the extent of agreement that each statement describes their current relationships with other people on a scale from 1 (strongly disagree) to 4 (strongly agree). Items are summed to give a score ranging from 4 to 16. A higher score indicates greater perceived opportunity for nurturance. The SPS has demonstrated construct, predictive, and discriminant validity (Cutrona & Russell, 1987). Internal consistency for the sub-scale is moderate ($\alpha = 0.60$; Vogel & Wei, 2005) and was 0.88 in the current study.

Employment. Employment status was assessed using direct questions asking participants to identify their current work status from a list provided. A dichotomous variable was created by collapsing possible employment and unemployment statuses into two categories (0 = not in paid employment, 1= in paid employment).

Volunteering. Scores from five items were summed to create an index of volunteering frequency. Participants were asked to indicate how often they contributed time and/or labour to each of the following: *providing a community service; providing a good; activism, campaigning, or advocacy; environmental stewardship; and mahi a whānau/Kapahaka, marae or hui*[11]. Responses were made on a scale from 0 (never) to 6

[11]This item was included to incorporate activities and components specific to Māori culture that would be considered volunteer work as it is defined in the current research. The terms can be understood as follows:
Mahi a whānau= while 'whānau' is often loosely translated as 'family', the meaning is more complex. It can refer to individuals bound by familial and ancestral ties but also those who are associates, close friends, those who come together for a common purpose, and those who are living as well as those who

(daily). Scores from five items were summed to create an index of volunteering frequency ranging from 0 to 30.

Demographics. These variables were age (in years), gender (male = 0 or female = 1), relationship status (not partnered =0, partnered = 1), education (up to secondary school qualifications = 0, post-secondary qualifications = 1), and ethnicity (New Zealand European, Māori, Other).

Physical and psychological health. The Physical Component Summary (PCS) and Mental Component Summary (MCS) scales of the Short Form Health Survey-12 version 2 (SF-12 v2; Ware, Kosinki, & Keller, 1996) were used to assess physical and psychological health. An example item from the PCS is: '*During the past 4 weeks, how much did pain interfere with your normal work (including work outside the home and housework)?*'. An example item from the MCS is: '*How much time during the past 4 weeks have you felt down-heartened and depressed?*' Responses are made on a scale of 1 (all of the time) to 5 (none of the time). Scoring is norm based with scores standardised to have a mean of 50 and standard deviation of 10. Higher scores on the PCS and MCS represent better physical and psychological health respectively.

Socio-economic status. Socio-economic status was measured using the Economic Living Standards Index Short Form ($ELSI_{SF}$; Jensen, Spittal, Krishnan, 2005)

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have died. Whānau comprises not only a physical dimension but also spiritual and emotional dimensions (Walker, 2017). Mahi a whānau may be understood as work within such Māori communities.
Hui = conference, meeting, or gathering.
Marae= a place where a community gather for the purposes of celebration, interaction, grieving, and discussion. The Marae is often considered central to Māori community and identity and is a place where Māori culture, including world-view, values, language, values, and social etiquette are given full expression (Whaanga, 2013).

a New Zealand non-income scale measuring material wellbeing (Jensen et al., 2005). The $ELSI_{SF}$ consists of 25 items across four categories: Economising Items, Ownership Restrictions, Social Participation Restrictions, and self-ratings of living standard. Scores are summed to produce a range from 0 to 41. To truncate outliers, respondents scoring below 10 are assigned a score of 10. Each respondent then has 10 subtracted from their total score to produce a range from 0 (lowest standard of living) to 31. The $ELSI_{SF}$ has demonstrated internal consistency (α =0.88) and as well as convergent validity (Jensen et al., 2005).

Data Analysis

SPSS 24 was used for all statistical analyses. Descriptive statistics including frequencies, means, and standard deviations were calculated. Pearson's Product Moment Correlation, ANOVA, and independent samples *t*-tests were used to test bivariate relationships between MIL, demographic, and other control variables. Hierarchical linear regression and mediation analyses using ordinary least squares path analysis and non-parametric bootstrapping (Hayes, 2013) were used for multivariate analyses. Missing data was handled using list-wise deletion.

Results

Sample characteristics

Demographic characteristics are presented in Table 1. Women outnumbered men by 8.8% and the majority of participants were New Zealand European (60.6%), had a good economic standard of living (58.4%), and were partnered (70.5%). There were 491 (39.9%) participants in paid employment and 653 (53.0%) were volunteers. The mean

MIL score was 25.11 (*SD* = 3.76) and the mean score on the Opportunity for Nurturance sub-scale was 11.99 (*SD* = 2.30).

Table 1

Demographic Characteristics

		Range	Mean (SD)
Age		60-77	68.5 (4.5)
			Frequency (%)
Gender			
	Female		670 (54.4)
	Male		562 (45.6)
Ethnicity			
	NZ European		746 (60.6)
	Māori		399 (32.4)
	Pacific Islander		77 (6.2)
Educational Level			
	Up to Secondary Qualifications		620 (50.4)
	Post-Secondary Qualifications		585 (47.5)
	Missing		27 (2.2)
Relationship Status			
	Partnered		869 (70.5)
	Not Partnered		337 (27.4)
	Missing		26 (2.1)
Economic Living Standard			
	Hardship		118 (9.6)
	Comfortable		335 (27.2)
	Good		719 (58.4)
	Missing		60 (4.9)

Relationships between MIL and Employment and Volunteering

Table 2 shows results from the hierarchical linear regression predicting MIL. Control variables age, relationship status, and ethnicity were not significantly associated with MIL at the bivariate level and were excluded from the regression analysis. Demographic and health variables explained 15.7% of the variation in MIL. After controlling for demographic and health variables that were significant at the bivariate level, volunteering significantly predicted MIL ($\beta = .140$, $p < .001$). Employment was not significantly associated with MIL. The final model explained 17.6% of the total

variance in MIL ($F(6, 970) = 34.57$, $p < .001$) with 1.9% of the variance explained by volunteering (R^2 change = .019, F change (1, 970) = 22.49, $p < .001$).

Table 2

Summary of Hierarchical Regression for Variables Predicting MIL

		Model 1	Model 2	
Step	Variable	β	β	sr^2
1	SES	.129***	.133***	.013
	Gender[a]	-.077**	-.063*	.004
	Educational Level[b]	.059*	.040	.002
	Physical Health (PCS)	.017	.016	.000
	Mental Health (MCS)	.303***	.303***	.073
2	Volunteering		.140***	.019
R^2		.157***	.176***	
ΔR^2			.019***	

[a] Dummy coded: 0=Female, 1=Male.
[b] Dummy coded: 0=Up to secondary, 1=Post-secondary.
*p<.05, **p<.01***p<.001

Mediating Effect of Opportunity for Nurturance

Table 3 and Figure 1 show the results of the mediation analysis using ordinary least squares path analysis and non-parametric bootstrapping (Hayes, 2013). Volunteers reported higher levels of opportunity for nurturance than non-volunteers (b_a =.055) and participants with higher levels of opportunity for nurturance reported higher levels of MIL (b_b = .253). A bias-corrected bootstrap confidence interval for the indirect effect (b_a b_b = .014) based on 10,000 bootstrap samples was entirely above zero (95% CI [.053, .0261]). Sobel's test also indicated the indirect effect was significant (z = 2.60, p = .01). The direct effect of volunteering on MIL was also significant ($b_{c'}$ =.108, p<.001). The variables controlled for in the mediation analysis were gender, SES, education, physical health, and mental health. The proportion of the total effect

mediated (P_M) indicated that opportunity for nurturance accounted for just over a tenth of the total effect of volunteering on MIL (P_M = .113).

Table 3

Summary of Analysis for Opportunity for Nurturance Mediating the Effect of Volunteering on MIL

		Opportunity for Nurturance				MIL		
		b[a]	*SE*	*p*		*b*	*SE*	*p*
Volunteering	*a*	.055	.018	.002	*c'*	.108	.027	< .001
Opportunity for nurturance		-	-	-	*b*	.253	.048	< .001
Constant	i_1	9.47	.477	< .001	i_2	14.25	.850	< .001
		R^2 = .048 $F(6, 960) = 8.12$, $p < .001$				R^2 = .194 $F(7, 959) = 32.92$, $p < .001$		

[a] b = unstandardized coefficient

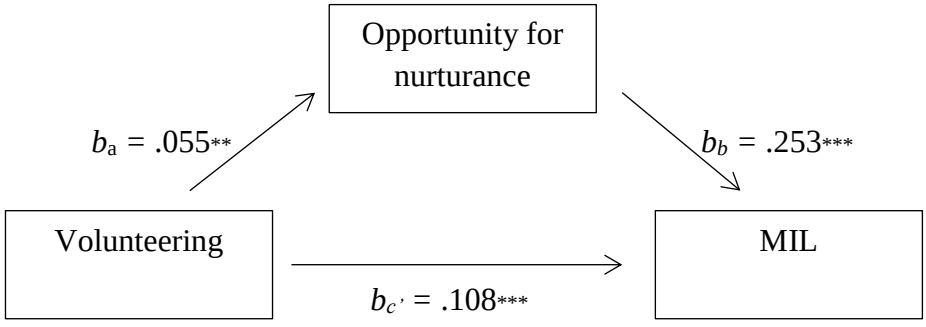

Figure 1. Mediation model for opportunity for nurturance employment and MIL.

Although the direct effect between employment and MIL, Hayes (2013) and others (Rucker, Preacher, Tormala, & Petty, 2011) demonstrate that the lack of significant direct or total effects does not preclude the possibility that significant indirect effects may still operate. Thus, a mediation analysis was carried out to test for indirect effects of employment and on MIL through opportunity for nurturance. The variables controlled for in the mediation analysis were gender, SES, education,

psychological health, and physical health. The indirect effect of employment on MIL through opportunity for nurturance was not significant (see Table 4). Participants in paid employment did not report significantly different levels of opportunity for nurturance than those not in paid employment (a = -.014, p = .928). A bias-corrected bootstrap confidence interval for the indirect effect (ab = -.004) based on 10,000 bootstrap samples was not entirely above zero (95% CI [-.081, .077]).

Table 4

Summary of Analysis for Opportunity for Nurturance Mediating the Effect of Paid Employment on MIL

		Opportunity for Nurturance				MIL		
		b[a]	*SE*	*P*		*b*	*SE*	*p*
Employment[b]	*a*	-.014	.149	.928	*c'*	.338	.220	.124
Opportunity for nurturance		-	-	-	*b*	.259	.048	< .001
Constant	i_1	9.56	.473	< .001	i_2	14.79	.833	< .001
		R^2 = .039 $F(6, 960) = 6.45$, $p < .001$				R^2 = .181 $F(7, 959) = 30.20$, p<.001		

[a] b = unstandardized coefficient
[b] Dummy Coded: 0=Not in paid employment, 1=In paid employment

Discussion and Implications

Given the associations between MIL and well-being among older adults, identifying sources of MIL among older adults is an important objective. The purpose of the current study was to examine work, in the form of employment and volunteering, as potential sources of MIL for older adults. Additionally, the study sought to examine what it is about these activities that may facilitate MIL, and specifically, whether opportunity for nurturance would mediate the relationships between these activities and MIL. Three primary findings emerged. First, employment was not associated with MIL; older adults

in paid employment did not report a greater or lesser sense of MIL than older adults not in paid employment. Second, a greater frequency of volunteering was associated with enhanced MIL. Finally, opportunity for nurturance mediated the relationship between volunteering and MIL.

The hypothesis that participants in paid employment would have higher MIL than participants not in paid employment was not supported. Although employment may stimulate MIL by providing structure (coherence), direction (purpose), a sense of worthiness (significance), and an avenue for self-actualisation and self-transcendence, it is possible these mechanisms are experienced more strongly or consistently through other roles and activities. Additionally, the relationships between paid employment and MIL are likely complex and analyses in the current study may not have been nuanced enough to identify such relationships. However, the results do not preclude the possibility that employment contributes to MIL among older adults, only that it does not convey any advantage over and above non-employment.

As hypothesised, and consistent with previous research (Schnell & Hoof, 2012), participation in volunteer activities was associated with MIL. Volunteering only accounted for a small proportion of the variation in MIL. However, this is not unexpected as it is likely other variables, such as interpersonal relationships (Krause, 2012) are more salient sources of MIL. When considering why volunteering but not paid employment is associated with greater MIL among older adults, it is important to consider how these roles differ. First, the volunteer role is more likely to have been sought out and chosen and so there is greater likelihood of consistency between core beliefs and life situation. While paid employment may also be sought out and chosen, it also generally comprises an element of necessity to provide for basic needs. Second, the

volunteer role is more likely to allow for self-transcendence which is associated with greater MIL (Bar-Tur et al., 2001; Grouden & Jose, 2014). Although employment can also involve experiences of self-transcendence, volunteering may more readily facilitate such experiences by its very nature: time, skills, resources are freely given rather than exchanged for pay.

As hypothesised, opportunity for nurturance mediated the relationship between volunteering and MIL. Previous research has identified relationship between volunteering and meaning (Schnell & Hoof, 2012). The current research contributes further understanding, demonstrating that opportunity for nurturance is one pathway through which volunteering impacts MIL. Specifically, volunteering may enhance MIL by enabling perceptions that one is needed, important, and responsible for the well-being of others. This finding contributes to the growing body of social support research which demonstrates the benefits associated with providing support for others.

Volunteering has been a successful intervention for enhancing MIL (Southwick et al., 2006). The current research suggests that simply increasing participation in volunteer activity may be less effective if the volunteering activity does not enable perceptions of responsibility for the well-being of others. However, given the small effect size, the relative importance of this particular pathway overall is questionable. Further research is needed to examine other mechanisms by which volunteering enhances MIL among older adults to maximise the effectiveness of volunteering at enhancing MIL.

The importance of interpersonal relationships for one's sense of MIL is well established (Bar-Tur et al., 2001; Lambert et al., 2013). However, findings of the current research

suggest it is not just relationships themselves that are important to older adults but the opportunity to provide support to others within those relationships and, in particular, to feel important, responsible, and needed for the well-being of others. An important implication of this finding is that it demonstrates a further pathway by which meaning can be enhanced in older adults: by ensuring adequate opportunities for older adults to provide support to others. While the continued support of older adults is indeed important, it should not overshadow the valuing of older adults as an important source of support to others. It is important older adults are not relegated to passive roles within families and communities but held as members whose skills, voices, and resources continue to be valued as significant.

There are a number of limitations to the current study. As the design is cross-sectional, causal conclusions cannot be made. While longitudinal analysis would have been more informative in this respect, such analyses were not possible as measures were not repeated across data sets. Additionally, although older adults were the population of interest, the older old, those over 80, were not represented in the sample. Given the existing evidence of lifespan differences in meaning and sources of meaning, it is possible the findings of the study are less applicable to the oldest old. Similarly, the findings may not extend younger cohorts moving into older age as different experiences of and attitudes towards employment, volunteering, and life in general are likely to influence if and how meaning is found. Finally, paid employment and volunteering are highly complex and multifaceted roles and it is likely that many job and organisational variable influence MIL. However, such variables were not measured in the HWR survey.

As a valuable resource for well-being among older adults, promoting MIL is an important objective. The experience of MIL may be enhanced through innovative strategies to increase activities, experiences, goals which enable a sense of responsibility for the well-being of others. Additionally, there is a need for further research to identify other pathways to MIL for older adults.

Reflections

While older adults were the target population of my thesis, researching MIL has provided me with an appreciation of the importance of a sense of meaningfulness across the life-span. However, I was challenged to consider how I might translate what I had learned about meaning at an abstract theoretical level into practical therapeutic applications. It is easy to recognise that some systems of psychotherapy are explicit in their orientation towards or inclusion of meaningfulness (e.g. logotherapy, Acceptance and Commitment Therapy) yet when reflecting on the construct of MIL as it is currently understood, I am able to appreciate how I can use interventions and approaches I am already familiar with to encourage the development of meaningfulness for clients. For example, sharing the case formulation might contribute to meaning by providing the client with a degree of coherence, the understanding that their experience makes sense. Similarly, behavioural activation might include activities which are not only allow for enjoyment but also allow for the individual to experience their lives and themselves as worthwhile (i.e. significance).

Similarly, researching and reflecting on the construct of MIL also helped to shape my understanding of the role and importance of goals in therapy. Previously I considered the primary role of a therapy goal was to act as a measure for determining when the work of therapy might be complete. However, when considering the elements of MIL

(coherence, purpose, and significance), I realise how goals may become therapeutic in and of themselves. By providing a sense of purpose and direction to an individual's life, formulating and working towards goals has the potential to contribute to a client's sense of MIL.

Weiss' model of social support broadened my understanding of social support and how it may be of therapeutic benefit. My approach to social support in the formulation of client difficulties has been to view lack of support as a perpetuating factor or presence of support as a protective factor. In general, the consequence of this approach in terms of intervention has been to aim to increase social support. However, Weiss' model and additional research on social support has helped me to realise this was a limited and simplistic approach to support. Weiss' model compels me to consider social support, and its role in a client's presentation, in a more nuanced way. For example, how absence of opportunities to provide support might impact well-being, how subjective perceptions of support are more important than objective perceptions, and how receiving social support from others is not necessarily always beneficial but may contributing to a sense of burdensomeness. I will need consider social support in a more comprehensive and multidimensional manner in case formulation and intervention.

References

Bar-Tur, L., Savaya, R., & Prager, E. (2001). Sources of meaning in life for young and old Israeli Jews and Arabs. *Journal of Aging Studies, 15*, 253-269. doi:10.1016/S0890-4065(01)00022-6

Baumeister, R. F. (1991). *Meanings of life*. New York, NY: Guilford Press.

Brown, S. L., Nesse, R. M., Vinokur, A. D., & Smith, D. M. (2003). Providing social support may be more beneficial than receiving it: results from a prospective study of mortality. *Psychological Science, 14*(4), 320-327.

Brown, W. M., Consedine, N. S., & Magai, C. (2005). Altruism relates to health in an ethnically diverse sample of older adults. *The Journals of Gerontology, Series B*(3), 143-152.

Chen, S. (2013). *Social support and health : Theory, research, and practice with diverse populations*. New York, NY: Nova Science Publishers.

Choi, E., Tang, F., Kim, S. G., & Turk, P. (2016). Longitudinal relationships between productive activities and functional health in later years: A multivariate latent growth curve modeling approach. *International Journal of Aging and Human Development, 83*(4), 418-440.

Cutrona, C., Russell, D., & Rose, J. (1986). Social support and adaptation to stress by the elderly. *Psychology and Aging, 1*(1), 47-54. doi:10.1037/0882-7974.1.1.47

Cutrona, C. E., & Russell, D. W. (1987). The provisions of social relationships and adaptation to stress. *Advances in Personal Relationships, 1*, 37-67.

Debats, D. L. (1999). Sources of meaning: An investigation of significant commitments in life. *Journal of Humanistic Psychology, 39*(4), 30-57. doi:10.1177/0022167899394003

Delle Fave, A., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research, 100*(2), 185-207.

Department of Labor. (2016). *Volunteering in the United States*. Retrieved from https://www.bls.gov/news.release/pdf/volun.pdf

Gonzales, E., Matz-Costa, C., & Morrow-Howell, N. (2015). Increasing opportunities for the productive engagement of older adults: A response to population aging. *The Gerontologist, 55*(2), 252-262.

Grouden, M. E., & Jose, P. E. (2014). How do sources of meaning in life vary according to demographic factors? *New Zealand Journal of Psychology, 43*(3), 29-38.

Gruenewald, T. L., Karlamangla, A. S., Greendale, G. A., Singer, B. H., & Seeman, T. E. (2007). Feelings of usefulness to others, disability, and mortality in older adults: The MacArthur Study of Successful Aging. *The Journals of Gerontology, Series B*(1), 28-38.

Haugan, G. (2014). Meaning-in-life in nursing-home patients: A valuable approach for enhancing psychological and physical well-being? *Journal of Clinical Nursing, 23*(13/14), 1830-1844. doi:10.1111/jocn.12402

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.

Hedge, J. W., Borman, W. C., & Lammlein, S. E. (2006). *The aging workforce: Realities, myths, and implications for organizations*. Washington, DC: American Psychological Association. .

Heisel, M. J., & Flett, G. L. (2016). Does recognition of meaning in life confer resiliency to suicide ideation among community-residing older adults: A

longitudinal investigation. *American Journal of Geriatric Psychiatry, 24*(6), 455-466.

Hinterlong, J. E. (2008). Productive engagement among older Americans: prevalence, patterns, and implications for public policy. *Journal of Aging & Social Policy, 20*(2), 141-165.

Jensen, J., Spittal, M., & Krishnan, V. (2005). *ELSI short form: User manual for a direct measure of living standards.* Wellington, New Zealand: Ministry of Social Development.

Krause, N. (2004). Stressors arising in highly valued roles, meaning in life, and the physical health status of older adults. *Journal of Gerontology, 59B*(5), 5287-5297.

Krause, N. (2009). Meaning in life and mortality. *Journal of Gerontology: Social Sciences, 64B*(4), 517-527.

Krause, N. (2012). Meaning in life and healthy aging. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and applications* (2 ed., pp. 409-432). New York, NY: Routledge.

Lambert, N. M., Stillman, T. F., Hicks, J. A., Kamble, S., Baumeister, R. F., & Fincham, F. D. (2013). To belong is to matter: Sense of belonging enhances meaning in life. *Personality and Social Psychology Bulletin, 39*(11), 1418-1427. doi:10.1177/0146167213499186

Lloyd, A., Kendall, M., Murray, S. A., & Starr, J. M. (2016). Physical, social, psychological and existential trajectories of loss and adaptation towards the end of life for older people living with frailty: A serial interview study. *BMC Geriatrics, 16*(1), 176-191. doi:10.1186/s12877-016-0350-y

Martela, F., & Steger, M. F. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and significance. *The Journal of Positive Psychology, 11*(5), 531-545.

McCall, G. J., & Simmons, J. L. (1966). *Identities and interactions: An examination of human associations in everday life.* New York, NY: The Free Press.

Morrow-Howell, N. (2010). Volunteering in later life: Research frontiers. *The Journals of Gerontology, Series B*(4), 461-469. doi:10.1093/geronb/gbq024

O'Connor, K., & Chamberlain, K. (1996). Dimensions of life meaning: A qualitative investigation at mid-life. *British Journal of Psychology, 87*(3), 461-477.

OECD. (2017). LFS by sex and age indicators: Employment population ratios. Retrieved from http://stats.oecd.org/Index.aspx?QueryId=64196#

Reker, G. T., & Wong, P. T. P. (1988). Aging as an individual process: Toward a theory of personal meaning. In J. E. Birren & V. L. Bengtson (Eds.), *Emergent theories of aging* (pp. 214-246). New York, NY: Springer.

Reker, G. T., & Wong, P. T. P. (2012). Personal meaning in life and psychosocial adaptation in the later years. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, resaerch, and applications*. New York, NY: Routledge.

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behaviour, 30*, 91-127.

Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass, 5*(6), 359-371.

Schnell, T. (2009). The Sources of Meaning and Meaning in Life Questionnaire (SoMe): Relations to demographics and well-being. *Journal of Positive Psychology, 4*(6), 483-499. doi:10.1080/17439760903271074

Schnell, T. (2011). Individual differences in meaning-making: Considering the variety of sources of meaning, their density and diversity. *Personality and Individual Differences, 51*(5), 667-673. doi:http://dx.doi.org/10.1016/j.paid.2011.06.006

Schnell, T., & Hoof, M. (2012). Meaningful commitment: Finding meaning in volunteer work. *Journal of Beliefs and Values, 33*(1), 35-53.

Sherman, N. E., Michel, R., Rybak, C., Randall, G. K., & Davidson, J. (2011). Meaning in life and volunteerism in older adults. *ADULTSPAN Journal, 10*(2), 78-90.

Southwick, S. M., Gilmartin, R., McDonough, P., & Morrissey, P. (2006). Logotherapy as an adjunctive treatment for chronic combat-related PTSD: A meaning-based intervention. *American Journal of Psychotherapy, 60*(2), 161-174.

Steger, M. F. (2012). Making meaning in life. *Psychological Inquiry, 23*, 381-385.

Steger, M. F., & Dik, B. J. (2009). If one is looking for meaning in life, does it help to find meaning in work? *Applied Psychology: Health and Well-Being, 1*(3), 303-320.

Thoits, P. A. (1983). Multiple identities and psychological well-being: A reformulation and test of the social isolation hypothesis. *American Sociological Review, 48*, 174-187.

Towers, A., Stevenson, B., Breheny, M., & Allen, J. (2015). Health, work, and retirement longitudinal study. In A. N. Pachana (Ed.), *Encyclopedia of geropsychology* (pp. 1-9). Singapore: Springer Singapore.

Uchino, B. N. (2004). *Social support and physical health: Understanding health consequences of relationships*. New Haven, CT: Yale University Press.

Vogel, D. L., & Wei, M. (2005). Adult attachment and help-seeking intent: The mediating roles of psychological distress and perceived social support. *Journal of Counseling Psychology, 52*(3), 347-357.

Walker, T. (2017). Whanau - Maori and family. Retrieved from https://teara.govt.nz/en/whanau-maori-and-family

Ware, J. E., Kosinki, M., & Keller, S. D. (1996). A 12-item short form health survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care, 34*(3), 220-233.

Weiss, R. (1974). The provisions of social relationships. In Z. Rubin (Ed.), *Doing unto others: Joining, molding, conforming, helping, loving* (pp. 17-26). Englewood Cliffs, NJ: Prentice Hall.

Whaanga, M. (2013). Marae management - te whakahaere marae. Retrieved from https://teara.govt.nz/en/marae-management-te-whakahaere-marae