Extending the Concept of Successful Ageing to Persons Ageing with Disabilities

by

Nicola Ann Heath

BSc (Psych) (Hons)

ORCID Identifier: 0000-0002-6170-8358

Submitted in total fulfilment of the requirements for the degree of

Doctor of Philosophy

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School of Psychological Sciences, University of Melbourne, Parkville Campus
I declare that the thesis entitled: *Extending the Concept of Successful Ageing to Persons Ageing with Disabilities*

comprises only my original work submitted for the degree of Doctor of Philosophy, except where indicated in the preface.

Where reference is made to the work of others, due acknowledgement has been made in the text.

I also declare that this thesis is fewer that the maximum word limit in length, exclusive of tables, figures, bibliographies and appendices as approved by the Research Higher Degrees Committee.

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## Preface

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Abstract

The dominant model of successful ageing developed by Rowe and Kahn, states that to age well older adults must be free of disease and disability, maintain high levels of cognitive functioning and remain actively engaged in life. However, this model has been criticised for ignoring and marginalising people ageing with disabilities who cannot be considered to be ageing successfully according to these criteria. This is particularly important as increasing numbers of people, with differing levels of physical impairments, are entering old age. A greater understanding of what it means to age well with a disability is therefore needed so that appropriate support and interventions can be made available.

This thesis investigated successful ageing from the perspective of older adults who are ageing with a disability to determine how individuals understand and retain a sense of ageing success in the context of disability and age-related changes. In Study One, insights were gained from older adults ageing with either post-polio syndrome (PPS) or a spinal cord injury (SCI). These were then used as a basis for developing a preliminary model of successful ageing which aims to provide a more inclusive and holistic approach, recognising the position of adults ageing with disabilities within a broader socio-political environment.

A mixed methods approach employing semi-structured in-depth interviews in Study One was used to build upon and extend the existing research in this area. The sample comprised 17 older Australian adults (eight male and nine female) aged 40-78 years (Mean age = 62.12, SD =12.11). Inductive thematic analysis revealed eight themes that contributed to the preliminary model of successful ageing. In Study Two, 367 international participants (194 ageing with a disability, and 173 ageing without a
disability, mean age = 56.82, \( SD = 6.33 \) completed an online survey designed to test the utility of the themes identified in Study One as predictors of self-rated successful ageing. A series of bivariate correlations, hierarchical multiple regression analyses, and moderation analyses was then conducted to test the relevance of the variables relating to the factors identified as important for successful ageing in Study One. The lack of disability or chronic conditions was not predictive of subjective assessments of successful ageing. Three potential new factors (psychological growth, respect and security) that contribute additional understanding of ageing successfully in the context of disability were identified. The data provided evidence for more inclusive, revised model of successful ageing, accounting for 40% of the variance in successful ageing scores for participants in this study ageing with a disability and 38% for those ageing without a disability. The results suggest a more nuanced model of successful ageing relating to health and physical functioning than that adopted by the current dominant model. This revised model has implications not only for the current model of successful ageing, but also for future healthcare and government services.
CHAPTER 1: INTRODUCTION

The topic of this thesis is successful ageing and, in particular, how those ageing with disabilities are able to age well or successfully. The systematic study of successful ageing and the identification of factors that help people thrive well into old age have been steadily gathering momentum over the last 50 years. Originally introduced by Havighurst (1961), the concept of successful ageing was seen as the antithesis to the then dominant disengagement perspective, which characterised old age as a time of mutual withdrawal between ageing people and society (Walker, 2002). In contrast, successful ageing represented a more active and positive approach to ageing – grounded in the activity theory of gerontology (Lemon, Bengtson, & Peterson, 1972). Activity theory argues that the maintenance of middle-aged activities and attitudes into later adulthood is essential for ongoing life satisfaction in old age (Lemon et al., 1972). Early models of successful ageing therefore sought to empower older individuals by enabling them to continue to participate in employment and society for longer, thus fostering an ongoing sense of worth and wellbeing (Barrett & McGoldrick, 2013). Following the introduction of an influential model by Rowe and Kahn (1987) that conceptualised successful ageing as occurring at the intersection of a) an absence of disability or disease, b) retaining a high level of cognitive ability and c) active engagement with life, successful ageing discourses have however become increasingly dominated by a focus on health and in particular the avoidance of disability and disease (Lamb, 2014).

Today, interest in successful ageing extends far beyond the research community. Increasingly, individuals and the media are adopting and promoting the new ideals of successful ageing, many of which encourage individuals to take personal responsibility
for their health and wellbeing through diet, exercise and appropriate lifestyle choices (Breheny & Stephens, 2010; Jolanki, 2009; Lamb, 2014). While encouraging healthy lifestyle habits throughout middle and young-old (60-74) years is doubtless well-intended and has been found to slow age-related decline (Lachman & Agrigoroaei, 2010), concerns have been raised that the current model of successful ageing encourages judgement and the promotion of negative stereotypes (Morell, 2003; Stone, 2003; Strawbridge, Wallhagen, & Cohen, 2002). The use of the adjective *successful*, for example, implies a dichotomous outcome, where one either wins and is successful or fails and ages unsuccessfully. As such, those who demonstrate impairments or age-related declines may be judged to be failures (Morell, 2003). More worrying for those ageing with a disability or chronic illness, is the underlying assumption that success is simply down to the individual making the right choices; it implies, that had the person merely tried harder and made different choices, they too might be enjoying a vigorous and able-bodied old age (Holstein & Minkler, 2003).

Indeed, as governments move to adopt and incorporate successful ageing ideals into social policy, concerns are growing about the impact of these messages on those ageing with a disability. Despite concerns that naming the avoidance of disability and disease as *success* denigrates and demeans those ageing with disabilities and illnesses (Holstein & Minkler, 2003), little research has been undertaken to examine the impact on individuals who are ageing with disabilities, or to discover their perspectives on the factors that enhance their sense of successful ageing, irrespective of their physical functioning.

**Background of the study: Modern demographics and government responses**

Old age is itself a relatively new phenomenon: as recently as the turn of the last century, life expectancy for a newborn in Australia was only 47 for males and 51 for
females (Australia Bureau of Statistics: ABS, 2014). Yet, with improvements to hygiene, food quality and health care, the average life expectancy of newborns in Australia today has increased to 79 for men and 84 for women (ABS, 2017). These changes suggest that Australia, like many other countries, will shortly move into unfamiliar demographic territory. With people living longer, the proportion of the Australian population aged 65 years or older is set to increase significantly – rising from 14% in 2012 to around 25% by 2060 (ABS, 2014). Similar population trends have been identified across much of the world (United Nations, 2013). These changes are projected to place considerable strain on global economies, as levels of dependency increase, placing pressure on the income and taxes of the shrinking working age population to provide support for the growing, older aged non-working segment (United Nations, 2013).

Against this backdrop, international governments have turned to the successful ageing research to help form appropriate policy responses that aim to limit the future burden of caring for an ageing population (Breheny & Stephens, 2010; Foster & Walker, 2015). Within Australia, government campaigns encourage individuals to adopt a healthy lifestyle so as to remain active, healthy and productive well into old age (Australian Government, Department of Health, 2014). The ‘Measure up’ campaign for example, aimed to raise awareness of the links between poor lifestyle choices and risks of developing a chronic disease (Australian Government, Department of Health, 2014).

Given the apparent far-reaching impacts and influence of the current models of successful ageing it is essential therefore that definitions are acceptable and appropriate to all. After all, the goal of successful ageing should not simply be that we are able to live longer, but that we are all able to enjoy that improved longevity. In order to do this
however, we must be mindful that any interventions implemented do not marginalise any segment of society, but rather seek to ensure that all older adults are able to age successfully.

**Extending the concept of successful ageing to persons ageing with disabilities**

This thesis, using a mixed methods approach, reports the results of two studies that investigated the meaning of successful ageing for people ageing with a disability. It comprises ten chapters, beginning with a review of the historical theories of ageing in Chapter 2. Chapter 3 examines the prominent models of successful ageing including the Rowe and Kahn (1997) model; providing a critical appraisal of the literature, and noting the limitations in terms of their applicability for those ageing with a disability. Chapter 4 reviews the current literature on ageing with a disability, taking perspectives from medical, psychological, rehabilitation and gerontological paradigms. Chapter 5 presents the aims and rationale for the studies included in this thesis.

Chapters 6 – 7 present the first empirical study (Study One), which used a qualitative approach to explore the perceptions and experiences of older Australian adults ageing with either post-polio syndrome or a spinal cord injury to determine the factors they believe have enabled them to age successfully. It is believed that these two populations embody exemplars of individuals who are ageing with a disability, representing as they do those who are likely to experience a progressive worsening of physical symptoms as in post-polio syndrome, or a more rapid decline as seen in many individuals with spinal cord injuries (Kemp, 2005). Semi-structured interviews were conducted and analysed qualitatively, with the aim of capturing people’s individual experiences of ageing with a disability, as well as their perceptions of what it means to age successfully despite an existing impairment. The objective was to use observations, demographic information, and analysis of semi-structured interviews to generate a
number of salient themes to be tested in a larger quantitative study. Participants described successful ageing in terms of eight different domains: 1) Looking after physical health; 2) Retaining cognitive abilities; 3) Positive psychological resources; 4) Retaining a sense of independence and autonomy; 5) Social engagement and participation in community; 6) Retaining a sense of purpose; 7) Fairness, respect and recognition; and 8) Safety and security. Importantly the findings revealed that the avoidance of disability was not predictive of subjective assessments of successful ageing. In fact, the results suggested a more nuanced definition of health and physical functioning than that adopted by the current dominant model. Three of the domains identified are new to the literature (sense of purpose, respect, and security) and contribute additional understanding of ageing success in the context of disability. Following this study, a preliminary model of successful ageing was developed; this recognises that, in many cases, the ability to age successfully with a disability is not wholly dependent on the individual, but also requires, and is influenced by extrinsic factors such as government policy, adequate health care, financial security and appropriate housing options and opportunities for social participation.

The preliminary model developed in Study One was then tested using a quantitative approach in Study Two (see Chapters 8 - 10). The aim of the second study was to replicate the qualitative results in a broader population of older adults ageing with a disability. Additionally the study sought to examine where differences and similarities were observed in perceptions of successful ageing factors between those ageing with and without a disability. Amazon’s MTurk platform was used to target and recruit two groups to participate in this study: firstly, individuals aged 50 or over with a physical disability and secondly, individuals aged 50 or over without a disability. A series of hierarchical multiple regression analyses, bilateral correlations and moderation analyses were then used to test the influence and predictive capabilities of
the variables relating to the domains identified in Study One. The findings of Study Two confirmed that the factors considered important for successful ageing are remarkably similar across both populations. Moreover, although physical health was endorsed as important in both populations (e.g., those ageing with and without a disability), neither physical limitations or number of health conditions impacted successful ageing scores. In fact, the findings suggest that a person’s satisfaction level with their physical health contributed most to a person’s subjective perception of their ageing success. This suggests a previously unrecognised difference between people’s cognitive evaluations and affective judgements. Finally, a revised model of successful ageing is presented that again recognises the internal and external determinants facilitating a sense of ageing success. This model was found to explain 40% of the variance in successful ageing scores for those ageing with a disability and 38% of the variance for those ageing without a disability. Chapter 11 discusses the major findings of the study based on the results of both Study One and Study Two, including implications not only for the current models of successful ageing but also for future healthcare and government services. New avenues for future research are also suggested.
Interest in the biological and psycho-social processes of ageing, and differences in ageing trajectories and psychological outcomes, has long been the focus of gerontological studies. A number of theoretical approaches have examined how ageing can be conceptualised (Vacha-Haase, Hill, & Bermingham, 2012). This chapter examines and critiques three of the most prominent theories of successful ageing that have developed over the years. The first section of this chapter provides a brief overview of the diversity observed in ageing trajectories before discussing the disengagement theory of ageing. The second section examines activity theory, while the third explores continuity theory. The aim of the chapter is to provide a background on the theories that underlie the modern models of successful ageing.

**Historical theories of successful ageing**

Against the background of population ageing, there is considerable interest in individual differences in ageing. Trajectories of health and ageing, for example, are very diverse (Freedman, Martin & Schoeni, 2002). For instance, Belsky, Caspi, Houtes et al., (2015), conducted a longitudinal study of biological ageing among a cohort of 954 New Zealander adults enrolled in the Dunedin Study, all of whom were aged 38 years old at the end-point of the study. The authors tracked multiple biomarkers using 18 physiological markers to determine the speed of physiological decline across the pulmonary, periodontal, cardiovascular, renal, hepatic, and immune systems. The markers were measured three times over a 12-year period, initially when the volunteers were aged 26, six years later at age 32, and finally at the age of 38. The researchers analysed the deterioration in the markers over time, to calculate a “pace of ageing” figure. The authors determined that there was considerable variation in biological
ageing despite these individuals being the same chronological age. In fact, by the time participants reached a chronological age of 38, the biological ages of participants ranged from 28 to 61. Furthermore, the evidence indicated that, at age 38, those individuals with a higher pace of ageing were less physically able, looked older, demonstrated more cognitive decline and brain ageing relative to those ageing more slowly and also reported worse health (Belsky, Caspi, Houtes, et al., 2015).

Definitions and categorisations of ageing remain the subject of much debate (Cheng, 2014; Costco, Prina, Perales, Stephan, & Brayne, 2014; Bülow & Söderqvist, 2014). The terms *normal or usual ageing* are often used to denote what is seen as the usual pattern of human ageing experienced by a large majority of people (Rowe & Kahn, 1987). It is differentiated from *pathological ageing*, which is commonly associated with ageing with a physical or mental disease or illness (Rowe and Kahn, 1987). Typical accounts suggest that the prototypical individual who is ageing normally is an independent adult with a strong and enduring sense of themselves, and who is able to “successfully meet their needs for income, housing, health care, nutrition, clothing, transportation, and recreation” (Atchley, 1989, pp184).

The systematic study of successful ageing, and the identification of factors that help people thrive well into old age, has been steadily gathering momentum over the last 50 years. For instance, a systematic review of the operational definitions of successful ageing conducted by Cosco, Prina, Perales, Stephan and Brayne (2014) found 104 published articles, of which only two predated the 1990s, 13 were published between 1990 – 1999, 29 were published between 2000 – 2009, and 38 were published between 2010 and 2012. This modern understanding builds on previous psychosocial theories (e.g., disengagement theory, activity theory and continuity theory), which were developed to explain how people develop and adapt in old age. Importantly, each
of these theories provides a different explanation and definition of both normal ageing as well as what it means to age well or successfully. The following sections discuss these theories in more detail and provide historical context to the current successful ageing literature.

**Disengagement Theory**

One of the earliest accounts of how people develop in old age was first proposed by Cumming, Dean, Newell, and McCaffrey (1960), and expanded into a theory by Cumming and Henry (1961). Assuming a structural-functionalist perspective, disengagement theory provided the first theoretical account of ageing that extended the focus of attention exclusively from the individual to also encompass the role of society and social systems (Lynott & Lynott, 1996). Based on a three-part study, Cumming, Dean, Newell, and McCaffrey, (1960) argued that the implicit theory underlying many of the empirical studies at the time supported the notion that society withdraws from the older person, leaving them, in effect, isolated and alone. They posited that, rather than becoming disenfranchised by this, the individual themselves cooperates in the process. The authors contended that, as people age, they experience not only physiological declines, but also develop increasingly eccentric mannerisms and responses due to reducing concerns about gaining or maintaining the approval of others. Thus, it is argued, that as people age they become less constrained by concerns about conforming to society’s norms, and so are more able to enjoy a certain carefree self-centredness (Cumming, Dean, Newell, & McCaffrey, 1960). In fact, the authors found that social interactions and role varieties decreased with age, with the proportion scoring low on the social life space measure increasing from 14% for those aged 50 to 54, to 82% for those aged 70 to 74 years of age. The authors argued that these findings provided support not only for the prevalent, at that time, albeit implicit theory, that
society and social structure withdraw from the individual at older ages, but also that the individual themself hastens this process by disengaging themselves from the structure (Cumming, Dean, Newell, & McCaffrey, 1960). It was also argued that these concurrent processes lead to a reduction in the salience, strength, and importance ascribed to interactions, ultimately leading older individuals to self-select a diminishing number of interactions to maintain, and thus precipitating their inevitable withdrawal from social systems. The authors further suggested, that this process might be akin to an unconscious anticipatory socialisation process, whereby the participant is looking ahead to a future time when they will be less involved, and in essence, practicing for old age (Cumming et al, 1960).

When the disengagement process is complete, this theory contends that a new equilibrium is established that is marked by a reduction in the standard and closeness of remaining social connections (Henry, 1965; Burbank, 1986; Fry, 1992). Importantly, the theory also posits that, under normal ageing conditions, the process of withdrawal is both “intrinsic and inevitable”, and as such the disengagement process is “not only a correlate of successful ageing but also probably a condition of it” (Cumming & Henry, 1961, p. 14). Indeed, successful ageing in this context was posited to occur only when the individual accepts the process of withdrawal and no longer seeks an active life (Havighurst, 1961).

The tendency for individuals to reduce the amount of social interaction they undertake as they age was further supported by research undertaken by Havighurst, Neugarten, and Tobin (1963) and the Duke Geriatrics Project Research (Maddox, 1964). In the three-year longitudinal study reported by Maddox (1964), 182 healthy older adults aged 60 to 94 were recruited from the area around Durham, North Carolina. The results revealed that beyond age 60, there was a tendency for activity
levels to decrease as age increased, largely due to a reduction in interpersonal activities. Furthermore, Maddox (1964) found that experiencing objective or subjective good health increased the likelihood that a participant would report high morale despite low activity levels. Additionally, positive affect and a sense of usefulness also contributed to the maintenance of high morale as activity levels declined.

An additional tenet of disengagement theory further suggests that, although older people will naturally seek to withdraw from society due to declining abilities, organisations and governments also simultaneously instigate mechanisms and policies to encourage the smooth disengagement of older individuals, to make way for the next generation (Cumming & Henry, 1961). It is worth noting that the literature in the field of ageing prior to 1961 was primarily concerned with adjustment to role changes experienced later in life, rather than examining the structures that necessitated these role changes (Lynott & Lynott, 1996). Research preceding the formalisation of disengagement theory simply regarded social systems and conditions such as retirement, poverty, ill health and social isolation as the facts of life as an older person (Lynott & Lynott, 1996). Thus, in the concept of disengagement theory, Cumming and Henry (1961), simply made explicit what had previously been assumed by suggesting that institutionalised mechanisms, such as mandatory retirement ages and government pensions, are purposely designed to encourage older individuals to disengage from the workforce while allowing them to retain their self-esteem (Cumming & Henry, 1961; Marby & Bengtson, 2005).

Perhaps the most controversial aspect of disengagement theory, however, is its contention that ageing individuals collaborate and consent to this withdrawal as a means of resolving their cognitive dissonance over their own diminishing capacity (Cumming, 1963; Fry, 1992). Indeed, Cumming (1963) argues that the process of
withdrawal from society at older ages is entirely natural and benefits the individual by allowing them to return to a state of individuation and regain a sense of peace after an initial adjustment period marked by heightened anxiety.

**Criticisms of Disengagement Theory**

Although early research (Maddox, 1964a; Havighurst, Neugarten, & Tobin, 1963) initially found support for some of the claims proposed by disengagement theory, concerns were soon raised regarding the validity of many of the concepts posited by the theory (Maddox, 1964). In a critical review of the early evidence, Maddox (1964) found a number of important methodological limitations that called into question the veracity of many of the fundamental claims made as part of disengagement theory. For example, Maddox noted that potential outcome modifiers such as gender, health, intelligence and personality type had not been controlled for in the earlier research of Cummins and Henry (1961). Maddox (1964) therefore concluded that the inevitability of the disengagement process as initially described may have been considerably overstated.

Almost simultaneously, Rose (1964) condemned disengagement theory as being too ethnocentric; based solely on research from a single industrialised and potentially unrepresentative segment of society. Indeed, in their later study, conducted among older adults in Denmark, Britain, and the United States, Shanas and colleagues found little evidence of disengagement whether considered from either an objective or subjective perspective (Shanas, Townsend, Wedderburn et al., 1969). Similarly, a study by Tallmer and Kutner (1970) examined the notion that older adults enjoy better morale after they have disengaged. A sample of 101 women and 80 men from the New York City area, were asked to complete a series of questions designed by Cummings and Henry (1961) as part of their morale index. Correlational analyses revealed that
after controlling for the effects of socio-demographic variables, such as marital status and income, there was no association between morale and the variables that were argued to affect disengagement (Tallmer & Kutner, 1970). The authors concluded that, not only were the sample recruited in the earlier Cumming and Henry study healthier and more financially independent than the general population, they had also not been selected at random; rather, they had been recruited by two retired clergymen. Thus it is argued that participants in the Cummings and Henry (1961) study may have represented an advantaged group who may have been better able to adapt to life (Tallmer & Kutner, 1970). In fact, research has found that higher levels of participation in older adulthood are associated with better health and higher socioeconomic status relative to those who withdraw from active participation and adopt a more disengaged lifestyle (Cutler, 1977).

Additional problems were noted in regards to a number of the fundamental assertions made under disengagement theory. A critique by Maddox (1964), for example, raised questions about whether in fact disengagement at older ages is indeed as universal and inevitable as of the theory would suggest, arguing that the process of disengagement may in fact only be applicable to a portion of older people. Maddox observed that when age is held constant, there remains substantial variability between indicators of social and psychological engagement across older adults indicating that factors such as gender, health status, intelligence, personality and lifestyle may all act as potential modifiers of the disengagement process (Maddox, 1964).

Furthermore, activity theorists such as Havighurst (1961), argued that, far from being a mutually beneficial and agreed upon process, disengagement is in fact more often imposed upon older individuals by society, rather than being the preferred arrangement of many older individuals themselves. Evidence for this came from a
study initiated by the National Institute of Mental Health, which found no evidence of universal disengagement at older ages. In fact, the data failed to find support for either the suggestion that older adults intrinsically withdraw from their social environment, or that the social environment withdraws from the older person (Yarrow, Blank, Quinn, Youmans, & Stein, 1963). In fact, the participants in this longitudinal study, were found to retain a similar range of activities, relationships, and general feelings toward life, with almost half the participants reporting an increase in social activities at the five-year follow-up (Yarrow et al., 1963).

Concerns were also raised that disengagement theory suggests that developmental processes are context-free, and that disengagement is both biologically determined and a critical precursor to successful ageing (Maddox & Campbell, 1985; Shanas & Maddox, 1985). Indeed, Maddox (1987), argued that suggesting that biological and societal needs coincide and produce homogeneity in lifestyles in old age is inherently flawed. Longitudinal research undertaken by Maddox and Douglass (1974) for example, demonstrated that individual differences are typically preserved throughout life. As the following critique of activity and continuity theory will demonstrate, a diverse mixture of lifestyles occur at older ages, lending support to the argument that individuals can age differently and do not need to disengage (Maddox, 1985).

Disengagement Theory today

Disengagement theory continues to be controversial, reflecting, it is argued, the values inherent in American society during the theory’s development. Indeed, as Marby and Bengtson (2005, p. 116) discuss, during the time of disengagement theory’s development, American beliefs of progress through “social order, conformity, and the promise of youth” were prevalent. Thus disengagement theory more accurately reflects
the values inherent during that particular period of American history and, as such, are likely to have reduced relevance for today’s society (Marby & Bengston, 2005). In light of its many limitations, including more recent accusations of ageism (Palmore, 1999), disengagement theory failed to gain widespread acceptance as an all-encompassing explanation of ageing. Nonetheless, disengagement theory deserves to be acknowledged and recognized as providing an important contribution to theoretical development; while many of its tenets may not have stood up to the rigors of examination, it nevertheless offered the first attempt at integrating the ageing process to take into account both individual ageing and the societal contexts within which ageing occurs. Moreover, it still provides a useful model for exploring the interplay of ageing from an individual and social context.

**Activity Theory**

The second major ageing theory to emerge, activity theory, was originally introduced by Havighurst (1961), as the antithesis to the previously dominant disengagement perspective. Unlike the disengagement theory of ageing, activity theory suggests that normative ageing involves continuing to pursue an active middle-aged lifestyle (Lemon, Bengston, & Peterson, 1972).

The genesis for the formal development of activity theory was an early study by Havighurst and Albrecht (1953). The authors interviewed a stratified random sample of 100 individuals aged 65 and over from a small Midwestern US town. They found that typically, high levels of activity in one role correlated with high levels of activity in others. Additionally, although a gradual decrease in role activity with age was noted, the authors observed that, as some roles inevitably decreased, (e.g., as a result of retirement), people were able to compensate by substituting other important roles into their self-concept, such as the care-giving grandparent role. Positive correlations were
also observed between activity, attitude and adjustment scores leading the researchers to conclude that “the more active people are, the better adjusted, as a rule” (Havighurst & Albrecht, 1953, p. 287). Importantly though, due to the correlational nature of the study this may be too great an assertion to make as cause and effect cannot be assumed. That said, a number of other studies have since reported similar results in studies conducted with community dwelling older adults (Goudy & Goudeau, 1982; Watson & Ager, 1991). More recently, research by McKenna, Broome, and Liddle (2007) among 195 Australian community dwelling older adults aged 65 or above (Mean Age = 75) found that participants still engaged in an average six roles; the most frequent of which were friend (96.4%), family member (95.4%) and home maintainer (87.2%). Additionally, participants also undertook roles and activities related to paid work (15%), caregiving (15%), study (15%) and volunteer work (45%), as well as social and solitary leisure roles. As may be expected, while time spent in activities such as work, caring, transport and volunteering declined with age, these important roles still persisted, albeit to a lesser degree, while other activities such as solitary leisure, social leisure and study increased. For example, older participants aged 75 years and over spent significantly more time engaged in solitary leisure activities relative to those aged 65 to 75 who spent more time in paid work and transportation. Of note was the finding that not only did occupational and role engagement appear not to decrease as age increased – participants reported at least 80% of their roles as valuable – greater life satisfaction was significantly related to role maintenance. In support of this finding Thiele and Whelan (2008) examined predictors of grandparent satisfaction in a community dwelling cohort of 149 non-custodial Australian grandparents (100 grandmothers, 49 grandfathers) aged up to 80 years. They found that the grandparent role conveyed a number of important benefits to participants, including
providing an ongoing sense of purpose and increasing self-esteem by maintaining a sense of being valued by others.

Activity theory in general, is predicated on the idea that older adults have essentially the same social and psychological needs as those who are middle-aged. As such, ongoing life satisfaction is dependent on an individual maintaining middle-aged activities and attitudes into later adulthood (Lemon, Bengston, & Peterson, 1972). Moreover, proponents of activity theory argue that continued social role participation is necessary for positive adjustment and to offset the negative effects of old age, thereby improving overall life satisfaction (Lemon et al., 1972). Importantly, similar to disengagement researchers, activity theorists also posit that society has a tendency to withhold opportunities for interaction from older adults leading to decreases in social roles and activities. For example, Rose (1972) found that social class factors and age interacted with desired retirement age. Most notably, as participants approached the mandatory retirement age, their desire to stave off retirement increased, suggesting that the process of withdrawal is far from mutual. In fact, unlike disengagement theorists, who viewed retirement as part of an inevitable and mutual withdrawal, activity theorists see older people as more the arbiters of their own fate and satisfaction in old age, arguing that well-adjusted individuals seek to maintain their middle-aged activities and lifestyle for as long as possible. As Baum and Baum observed: “optimal ageing is described as staying active, resisting a shrinking social involvement, and finding substitutes for roles, status and activities that are lost through retirement” (Baum & Baum, 1980, pp 23-24). In fact, as recognised in this quote, activity theorists argue that while some activities are naturally lost through retirement, similar roles and activities should be substituted, perhaps in either a formal or informal volunteer manner (Havighurst, 1968).
Activity theorists also argue that maintaining the activity levels of earlier
development stages, into old age can actively facilitate successful ageing. Moreover,
activity theory conceptualises successful ageing from the standpoint of both the
individual and the community. From an individual perspective, activity theory posits
that successful ageing relies upon the individual’s motivation to stay physically and
mentally active. In fact, successful ageing under this paradigm implies a denial of old
age through the continuance of one’s middle age activities and attitudes (Fry 1992).
Thus, it has been argued by some, that activity theory represents “a kind of anti-ageing
perspective” (Baum & Baum, 1980, p. 23).

Simultaneously, from the community perspective, successful ageing as conceived
by activity theorists refers to the community recognising and rewarding the activities
and skills of older adults and the contribution they make to the community as a whole,
perhaps though volunteer work or providing additional family support. The implication
of these two arguments is that, as noted by Gubrium (1973), by maintaining social
roles and work-like activities, the older person continues to be recognised as a valuable
individual, who continues to command respect, thus preserving self-esteem which
contributes to and facilitating high levels of adjustment and improved life satisfaction.
Certainly Spence’s (1968) findings from his study of 226 community dwelling adults
from the San Francisco area, which explored whether older adults who planned ahead
and remained active were higher in morale, led him to believe that continued activity
and maintaining a future focus is motivating to many older adults. For those under 75
years of age, a positive relationship between planning and satisfaction was observed.
Thus, older adults who remained actively engaged in social roles were found to be
healthy and happier relative to those who withdraw from social roles.
Criticisms of Activity Theory

Critics have identified a number of theoretical problems in the approach and assumptions made by activity theory proponents, not least of which is the implicit assumption made about the relationship between people’s actions and roles (Gubrium, 1973). Activity theorists appear to assume that individuals have control over the types of roles that are made available to them. However, as Gubrium, (1970) found, in assuming that most older adults have the ability to create and develop new sets of activities, activity theorists largely ignore the limitations faced by some older adults who perhaps experience a more disadvantaged background, lacking in social support or with insufficient financial resources to undertake the activities they would like. Indeed, in his 1970 study involving 210 older adults from Detroit, Gubrium found that morale was likely to be significantly lower for those participants with poorer health and fewer opportunities for social integration relative to those in good health. Similarly, if an individual is faced with restricted financial resources, they were significantly limited in terms of their ability to undertake the activities they desired and were more likely to feel socially isolated as a result (Gubrium, 1970). Gubrium further argues that, analogous with disengagement theory, in situations such as these, it is likely that older adults do not feel they that are able to exert control over their environment and may therefore be unable to reconcile their desired actions and roles with their reality (Gubrium, 1970; 1972).

Activity theory, much like disengagement theory has also been criticised for being too ethnocentric. Indeed, much of the supporting empirical evidence is based on an American middle-class perspective, and as such it inherently reflects the value judgements emanating from that stance. According to Lowy (1979), the theory promulgates the notion that it is typically better to be active and fight against adversity
rather than inactive and passive. Atchley (1977) argued that this was an idealistic notion, which ignored the unique heterogeneous patterns of behaviour displayed by individuals, ultimately setting people up for unrealistic expectations that as they get older, they will be able to retain a middle-aged and middle-class lifestyle.

A third criticism of activity theory is that it fails to take the progressive nature of ageing into account. Research has consistently shown that, as individuals get older and enter their eighth and ninth decades, there is a general reduction in activity levels over time, especially for those most markedly affected by declining health (Weir, Meisner, & Baker, 2010). Meanwhile, activity theory has largely overlooked the role of life circumstances, and instead suggests that activity and life satisfaction go hand in hand, irrespective of opportunity. However, evidence linking activity levels to life satisfaction is somewhat mixed. Although studies by Ostrow (1980) and Teague (1980) demonstrated a positive relationship between activity and life satisfaction, earlier longitudinal research by Maddox (1964) suggested that activity alone does not always correlate with high morale among older adults. Furthermore, research findings have shown that activity levels of older groups are not consistently and positively associated with life satisfaction (Gubrium, 1973; Lemon, Bengston, & Peterson, 1972; Maddox, 1970). Some studies have demonstrated that expectations of activity levels also play a role, with evidence that lower levels of activity are still associated with high levels of happiness in retirement villages, homes and aged care facilities where activity expectations are comparably low (Gubrium, 1970; Messer, 1967). Indeed, even Havighurst and Albrecht (1953) observed that health issues alone were insufficient to account for poor adjustment or low role activity, demonstrating that even the original authors were aware of gaps within the theory, and that other factors were likely to also exert an influence on individual’s perceptions of their own ageing success. It may therefore be argued that the activity theory approach is hampered by evidence that
appears to contradict its main proposition that high levels of activity lead to better adjustment and high morale.

The theory also appears to set up the unrealistic expectation that to age successfully, steps should be taken to guard against any threats to activities or social roles, ensuring that alternative activities are found as promptly as possible when any activity is threatened. Thus, according to activity theory, should friends or family members die, older people are expected to seek alternatives for companionship, and if health issues start to impact activities, these activities should quickly be replaced with substitutes that are less onerous. Yet Weiss’ (1969) research suggests that loneliness arising from a breakdown in social relationships or the death of partner or friend is not significantly compensated for by work-like activities and active involvement in other activities. In relation to the theory, this therefore provides accumulating support for the suggestion that activity alone is insufficient for successful ageing and that additional phenomena, including the quality and value ascribed to the activity, as well as additional intrinsic and extrinsic forces influence individual’s ability to age successfully.

Activity Theory today

Activity is unquestionably a complex phenomenon representing a mix of behaviours, attitudes and emotions, likely influenced by both biological and cultural factors. Indeed, despite the gaps and limitations of the theory itself, activity theory provides one of the most popular accounts of how individuals may remain satisfied and empowered in old age. It also continues to be one of the most well-researched perspectives in the social gerontological literature. Researchers have, for example, found that individuals who remain active and/or continue to pursue goals related to personal growth (i.e., through continued learning and seeking out new social
opportunities) are among the most well-adjusted (French, Thorson, & Perreault, 1981). Certainly the evidence suggests that continuing a level of activity from middle to old age does support activity theory’s position as a valid alternative to disengagement theory. However, as the following discussion of continuity theory demonstrates, there remain some significant process gaps that the theory does not currently address.

**Continuity Theory**

Continuity theory may be regarded as an attempt to bring together the disparate views of disengagement and activity theories. Unlike the previous two theories that primarily focus on ways to adapt to the changes experienced as part of ageing, continuity theory focuses on the relationship between behaviours and their psychological functions (Nimrod & Kleiber, 2007).

Tracing its roots back to the Kansas City Study of Ageing – a large-scale ageing study conducted in the United States during the late 1950’s into the early 1960’s – Havighurst and colleagues followed and interviewed a total of 159 men and women aged 50 to 80 over a six-year interval to gain a greater understanding of their life pattern, attitudes and values (Havighurst, 1968). Havighurst (1968) found that, although the data appeared to partially support both disengagement and activity as processes associated with ageing, neither theory adequately explained the findings related to life satisfaction. More specifically, it was found that, although the most active older adults generally had greater life satisfaction relative to those that had lower levels of engagement, the pattern was not consistent, and in fact there were also older adults who despite scoring low in social role activity achieved high life satisfaction. In fact, a total of four combinations of activity and satisfaction were found; high-high and low-low being the most frequently observed (Havighurst et al., 1968). Neither activity theory nor disengagement theory provided a satisfactory explanation for this diversity.
On the basis of these findings, the authors sought to examine the role of personality, and the function it serves in enabling individuals to adapt to the ageing process. Taking inspiration from an earlier interview-based study of 87 older males (Reichard, Livson, Petersen, & Frenkel-Brunswik, 1962), Havighurst speculated that personality type and the ability to retain a sense of continuity were likely to moderate the relationship between life satisfaction and activity (Havighurst, 1968). In the earlier study undertaken by Reichard and colleagues, participants were rated on 115 personality variables based on interviews and subsequently grouped into one of five categories, based on their adjustment to ageing. Three of these groups – mature, rocking chair and armoured – were judged to be ageing successfully, while two – angry and self-haters – were judged to be ageing unsuccessfully (Reichard, Livson, Petersen, & Frenkel-Brunswik, 1962). Havighurst (1968) observed that, within the successful ageing categories, individuals were displaying quite different behavioural adjustments to ageing based on their personality types. For example, the armoured group were described as actively resisting dependency and retirement, behaviours most closely represented by activity theory. Conversely, those in the rocking chair category, who were described as more content to depend on others, were more closely aligned to the disengagement perspective. The Kansas City Study of Adult Life continued this search for a personality dimension, extending the previous research to include female participants (Havighurst, 1968). The 159 participants were rated on 45 personality variables, covering both the cognitive and affective aspects of personality. Patterns of behaviour and activity levels were also examined based on an assessment of the interviews participants undertook and finally, a measure of life-satisfaction was also included. The data revealed eight different patterns of ageing which Havighurst argued were not only likely to be established and predictable by middle age, but also were
likely to be the pivotal dimension in predicting relationships between level of activity and life satisfaction (Havighurst, 1968).

Initially developed as a general theory of ageing that sought to explain the stability of human development, continuity advocates argue that an individual’s unique pattern of traits and behaviours show considerable continuity across the lifespan (Havighurst, 1968; Lemon et al, 1972). Today modern continuity theory (Atchley, 1989; 1999) has evolved to provide a more dynamic account of the process of normal ageing that challenges the historical homeostatic or equilibrium models of ageing, such as disengagement (Cumming & Henry, 1961) and activity theory (Havighurst, 1961), Havighurst, Neugarten, & Tobin, 1963; Roscow, 1963). As an example, activity theory assumed that when change occurred, the desire to maintain homeostasis activated responses aimed at restoring the previous equilibrium (Atchley, 1987). Modern continuity theory, in contrast, challenged the uni-dimensional and global views of both activity and disengagement theories (Lynott & Lynott, 1996) and adopted a more evolutionary perspective, recognising that many of the changes occurring as part of the ageing process cannot be completely offset, and thus maintaining true homeostasis becomes impossible (Atchley, 1987). In this context, therefore, continuity was used to explain the coherence or consistency of patterns over time, rather than referring to a fixed state or lack of change (Atchley, 1989). Empirical support for this assertion was provided through the Ohio Long-Term Care Research Project – a qualitative study – which found that that older adults were more inclined towards maintaining stability in later life, rather than withdrawing or increasing social activity as posited by disengagement and activity theories respectively (Atchley, 1999). Thus Atchley argues that continuity does not mean rigidity or inflexibility, but is instead influenced by the individual’s past, reflecting an individual’s evolution over time. More specifically, Atchley (1989) suggests that internal continuity is achieved when an individual
consistently acts within their value structure. External continuity on the other hand may be achieved through the stability of external structures, for example an individual’s social roles and living environment. Atchley (1999) contended that the use of familiar strategies, in familiar areas of life, provides an ongoing sense of stability, which enables the individual to adapt to changes that take place across the lifespan, helping them to maintain a stable direction, which in turn influences life satisfaction.

The modern dynamic view of continuity follows from the idea that not only does a person’s character and temperament remain largely unchanged over time, but also that through the persistent and adaptive use of familiar strategies during middle and older ages, people are able to protect and maintain existing structures and roles, thus maintaining life satisfaction over the longer term (Atchley, 1989). It is therefore argued that where change, like evolution, builds upon the past, it is part of continuity itself. Indeed, research has consistently shown that retirees tend to continue, and even increase, participation in the same or similar activities they enjoyed prior to retirement (Atchley, 1993; Iso-Aloha, Jackson, & Dunn, 1994; Robinson & Godbey, 1997; Rosenkoetter, Garris, & Engdahl, 2001). Atchley (1989) further argues that, in adapting to normal ageing, individuals aspire to retain inner psychological continuity (e.g. views, opinions, attitudes and preferences that shape an individual’s personality and behavior) as well as outward continuity of social roles and activities. Thus, an individual’s natural tendency towards continuity as they age extends to both activities that are highly valued by the person (Lawton, 1993), as well as those that make up everyday activities, such as catching up with friends and family (Kelly, 1999).

Importantly, however, it is argued that it is not the specific level or amount of activity that influences an individual’s perceived life satisfaction as they age, but rather, how congruent current activities and lifestyles are with earlier ones. Thus, according to this
theory, successful ageing relies upon achieving continuity in lifelong experiences (e.g. what one has become accustomed to as a personal norm).

Continuity theory views the maintenance of continuity (both internal and external) as an adaptive strategy that is supported by both individual preference and social approval (Atchley, 1989). It is argued, therefore, that should individuals encounter increased restrictions or limitations as they age that prevent them from participating in preferred activities, this will trigger a sense of loss. However, Atchley (1999) argued that greater life satisfaction as well as greater maturity and perceived wisdom often accompanies the process of resolving discontinuities. Research conducted by Rubinstein, Kilbride, and Nagy (1992) suggests that individuals are able to use two key cognitive processes: (1) reinterpretation of activities – simultaneously re-emphasising the importance of maintained activities while devaluing the importance of activities which are no longer possible; and (2) substitution – finding comparable alternatives for desired activities in order to ameliorate any losses.

**Criticisms of Continuity Theory**

Continuity theory may itself be considered more of a descriptive theory; it does not, for example, provide specific information or guidelines on the ideal amount, frequency or level of involvement required of social activity, focusing instead on the relationship between psychological functions of behaviours (Fry 1992). Unfortunately, this lack of clarity poses some issues when attempting to operationalize the definition of continuity. Indeed, it may be argued that, although developing a strict definition of continuity may appear to be deceptively simple, unless behaviors are tracked longitudinally, there are risks that any short-term changes may be taken as evidence of discontinuity, while any behaviors that may share similarities with an earlier point in the life span could be mistakenly viewed as evidence of continuity (Fry, 1992). There
is, after all, little guidance as to the amount of change that is acceptable within a continuity perspective, or even what the nature of such changes could be (Fox, 1982).

This raises an important point. Continuity theorists argue that, to age successfully, change must be assimilated seamlessly into one’s prior history. Continuity is thus best described in terms of an individual’s subjective perception that changes fit with, and link to their past (Atchley, 1989; Cohler, 1982). The maintenance of external continuity rests on interacting in familiar environments, using familiar skills and undertaking familiar roles and relationships. External continuity therefore, while observable by others, can only be validated by making reference to the person’s internal structures and set of ideas regarding what is typical for them. Essentially therefore, the degree of continuity, be it internal or external, ultimately rests on the individual’s subjective recollections, and as such, it can only judged by the individual themselves (Atchley, 1989). This poses problems because not only are subjective recollections open to a range of cognitive biases, including consistency and hindsight bias, but without adequate operationalisation, continuity theory cannot be adequately tested or disproven (i.e., it is not falsifiable).

**Continuity Theory today**

The current evidence base regarding continuity theory is derived from four kinds of studies: (1) retrospective recall-based studies (e.g., Nimrod, 2007; Rosenkoetter et al., 2001); (2) cross-sectional investigations looking at different age groups (e.g., Havighurst, 1968; Nimrod & Kleiber, 2007; von Bonsdorff, Shultz, Leskinen, & Tansky, 2009); (3) longitudinal research (e.g., Long, 1987; Stanley & Freysinger; 1995); and (4) a combination of the above (e.g., Verbrugge, Gruber-Baldini, Fozard, 1996). Other than studies falling under category four, the other approaches described may be considered inadequate in terms of their overall validity and reliability. Cross-
sectional studies, for example, are unable to shed light on, or assess, individual change over time. Indeed, in all of the studies identified above, continuity is assumed by comparing individuals in one age group with another. This is important because, if one is to argue that successful ageing depends on the extent to which one is able to continue in line with previous behaviours and attitudes, no evidence is available to confirm or dispute this assertion at the individual level. As highlighted above, retrospective recall-based studies can also be biased by memory limitations, thus compromising their credibility. Longitudinal studies, although able to avoid many of these problems, are also subject to changes and influences exerted by the prevailing social environment. For instance, in the study by Long (1987) an attrition rate of almost 20% was observed between the first and second observation points despite there being a maximum of only 24 months between data points. Similarly, Stanley and Freysinger (1995) reported an 85% attrition rate during a 16-year longitudinal study. Attrition rates such as these weaken the validity of the findings, as the 164 participants who remained in the Stanley and Freysinger (1995) study may no longer be representative of the 1,106 who originally contributed data, thus compromising the generalisability and external and internal validity of the results. Despite these limitations, evidence of different types is indicative that there may be a predisposition toward continuity in later life, and provides some support for the behavioral aspects of the Continuity Theory.

Importantly for the current study, Atchley (1989) also distinguishes normal ageing from pathological ageing, suggesting that individuals who are affected by physical or mental disease are ageing pathologically, and unable to age ‘normally’. Additionally, it is argued that external continuity (defined as the remembered structure of physical and social environments, role relationships, and activities) is a less practical adaptive strategy for older people who cannot meet their own needs due to disability or
a lack of financial resources (Atchley, 1989). Yet whether internal or external, it has been posited that the degree of continuity is dependent on a moment in time assessment made by the individual based on their recollection of their past; therefore, given that people construe the world around them by means of a personal repertory of concepts and experiences (Berger & Luckmann, 1966), it is hard to understand why individuals with disabilities or limited resources would be any more or less able to use continuity strategies adaptively. Consequently, this is an area that will be explored in this thesis, given it is as yet poorly understood and often assumed in the literature.
CHAPTER 3: EMERGENT MODELS OF SUCCESSFUL AGEING

This chapter examines and critiques the current most influential models of successful ageing. The dominant model of successful ageing as proposed by Rowe and Kahn (1997) is discussed first. This model may be described as an outcome model describing the ‘what’ of successful ageing, thus it describes the biopsychosocial aspects required for an individual to be categorised as ageing successfully. The second model examined is that of Selective Optimisation with Compensation (SOC) as described by Baltes and Baltes (1990). This model relates more to the process of ageing successfully, describing the ‘how’ rather than the what. Thus SOC focuses on an individual’s ability to successfully adapt to and negotiate the ageing process.

Over the last 30 years, a substantial body of empirical research has been undertaken with older adults who continue to enjoy good health and functionality and who are judged to be ageing ‘well’ or ‘successfully’ (Bowling & Iliffe, 2006; Cosco, Prina, Perales, Stephan, & Brayne, 2014; Ferri, James, & Pruchno, 2009; Hodge, English, Giles, & Flicker, 2013; Iwamasa & Iwasaki, 2011). Despite the interest, contemporary models of successful ageing remain contentious due to a lack of agreement about how to define and measure the concept. A review by Depp and Jeste (2006) identified 28 studies that sought to examine the frequency and predictors of successful ageing. Across the studies, 29 different definitions were used and although most (26) included physical functioning and freedom from disability, there was little agreement beyond this as to the additional elements required for ageing to be deemed ‘successful’ (Depp & Jeste 2006). For instance, thirteen studies included cognitive functioning, six included a measure of life satisfaction or wellbeing, eight included an engagement measure, six included illnesses, four included longevity, three included
self-assessed health, two personality, two environment, and two included a subjective sense of ageing successfully (Depp & Jeste 2006). More recently, Cosco, Prina, Perales, Stephan, and Brayne (2014) found that the number of operational definitions of successful ageing had extended to 105 across 84 studies. Again, while the majority (92.4%) of the models identified in the review included physiological constructs, there was little consensus on the number or type of additional constructs required beyond this (Cosco et al., 2014).

The continuing disagreement about the necessary components extends to whether they are best measured by objective criteria, assessed by individual subjective evaluations, or a combination of both (Pruchno, Wilson-Genderson, Rose & Cartwright, 2010). Certainly, most current conceptions appear to have overlooked the subjective/lay perspectives of older people when considering how successful ageing should be defined (Martinson & Berridge, 2014). Over time however, two significant successful ageing models have emerged; these being the Successful Ageing model proposed by Rowe and Kahn (1997) and the Selective Optimisation with Compensation model proposed by Baltes and Baltes (1990). The first of these theories seeks to provide criteria for, and an operational definition of what successful ageing represents, whilst the second model proposes possible mechanisms and processes by which this occurs. These models are discussed in more detail in the following sections.

**The rise of Rowe and Kahn’s (1997) model of successful ageing**

Based on the activity theory of ageing, one of the most influential models of successful ageing is that proposed by Rowe and Kahn (1997). Since first advanced, their successful ageing model has generated considerable research interest (Foster & Walker, 2015). In their 1987 article, Rowe and Kahn conceptualized ageing and illness as two distinct processes (Rowe & Kahn, 1987). As a result, they sought to distinguish
‘usual ageing’ from ‘successful ageing’, arguing that to age ‘successfully’ one needed to maintain physical health and avoid disease. In subsequent refinements to their model, Rowe and Kahn (1997) extended their definition of successful ageing to include the following three objective criteria: a) freedom from disease or disability; b) maintaining high levels of cognitive functioning and; c) active engagement in life (Rowe & Kahn, 1997). Thus, the authors contend that successful ageing is only achieved where all three overlap (Rowe & Kahn, 1997). Moreover, since the introduction of the Rowe & Kahn (1997) model, much of the subsequent successful ageing discourse has continued to focus on measures of physical health. Importantly, Rowe and Kahn also viewed the process of decline and functional loss as largely modifiable through an individual’s own actions, therefore emphasizing the importance of individual responsibility for ageing well (Foster & Walker, 2015).

**Criticisms of Rowe and Kahn’s successful ageing model**

Today, the Rowe and Kahn (1997) model of successful ageing remains highly influential, continuing to guide both empirical research and many laypersons’ understanding of what it means to age well (Lamb, 2014). Despite this, the model is not without its detractors. Indeed, the successful ageing model has been widely criticised as representing an unrealistic ideal of ageing. Prevalence studies using Rowe and Kahn’s (1997) successful ageing criteria, for instance, suggest that, even among the general population, the model may only ever apply to a small minority of older people – most of whom would be considered young-old (60-74) rather than old-old (75 years and over). In a longitudinal study of 999 British individuals, only 23% of those aged 65 or over met the Rowe and Kahn criteria for successful ageing, with younger participants (aged 65-80) being almost 1.7 times more likely to be successfully aged than those aged 80 or above (Bowling & Iliffe, 2006). This finding is supported by
research by Weir, Meisner, and Baker, (2010) who found a strong correlation between age and disability, thereby showing that the older a person is, the less likely they are to meet the strict criteria for successful ageing. Furthermore, biennial research undertaken with over 9,000 participants from the US Health and Retirement Study in the US by (McLaughlin, Connell, Herringa, Li, & Roberts, 2010) from 1998 to and 2004 found that no more than 11.9% of community dwelling American adults aged 65 or over met the three successful ageing criteria in any one year.

Partly in response to the low ‘success’ rates reported, some researchers have suggested expanding the criteria to take into account what successful ageing means to older adults themselves. For instance, Strawbridge, Wallhagen, and Cohen proposed a subjective dimension of successful ageing, asserting that to learn more about ageing it was necessary to ask older people about their experiences (Strawbridge, Wallhagen, & Cohen, 2002). In their 2002 study, Strawbridge et al. tested 11 dichotomous measures of wellbeing to determine their likelihood of predicting successful ageing, finding that variables related to expectations of ageing, positive affect and satisfactory and supportive relationships were all positively associated with ageing success.

Additionally, the authors found that although the proportion of individuals who report that they are ageing successfully generally declined as the number of chronic conditions increased, there remained a significant number of individuals who still rated themselves as ageing successfully in spite of experiencing a number of chronic and even disabling conditions. Similarly, Reichstadt, Sengupta, Depp, Palinkas, and Jeste (2010) found that balancing self-acceptance, adapting to one’s circumstances and achieving self-contentment were important on the one hand while remaining engaged with life and finding opportunities for self-growth were important in facilitating a sense of ageing well on the other.
In a broader study, Jopp et al., (2014) investigated lay perspectives of successful ageing among 306 young, middle aged and older adults from the US and Germany. Their results revealed 16 categories of determinants of successful ageing including having and maintaining good health, remaining active and engaged, social participation and access to resources, being confident and accepting of oneself, remaining positive, adaptable and independent and having sufficient financial resources. Cultural differences were noted in terms of many of the psychological factors identified as important for ageing successfully (i.e., attitudes, self-efficacy, wellbeing and coping). Participants from the United States, for example, were found to mention Meaning almost 3 times more often than their German counterparts, while well-being was also mentioned approximately one and a half times more often by U.S. participants (Jopp et al., 2014). Similarly, in their study examining how older adults’ views of successful ageing differed from those of researchers, Phelan, Anderson, LaCroix, and Larson (2004) surveyed 1,985 Japanese Americans aged 65 and older and 2,581 Caucasian Americans aged 65 and older, finding that remaining in good health, avoiding disease and being able to care for oneself were endorsed by over 90% of participants in both cohorts. Additionally, having supportive social connections and retaining one’s autonomy were endorsed by over 85% of the Japanese Americans participants and over 90% of Caucasian participants and being able to cope with challenges in later years and remaining true to one’s values were endorsed by over 80% of the Japanese Americans participants and over 90% of Caucasian participants.

While less research attention has been directed at the subjective component of successful ageing relative to the objective component, studies that have contrasted the two approaches consistently find a large discrepancy between results (Gureje, Oladeji, Abiona, & Chatterji, 2014; Romo et al. 2013; Strawbridge, Wallhagen, & Cohen, 2002). In general, a far higher percentage of older persons consider themselves to be
ageing successfully than would be judged to be doing so by the Rowe and Kahn criteria. For example, in the study by Strawbridge, Wallhagen, and Cohen (2002), 50.3% of those surveyed, considered themselves to be ageing successfully, but only 18.8% met the stringent Rowe and Kahn criteria. Research by Romo and colleagues (Romo et al., 2013) found that, among an ethnically diverse sample of older adults with late-life disability, the majority (71%), still considered themselves to have aged successfully, although again differences were noted in the success rates recorded across ethnic groups with Caucasian American all reporting that they had aged successfully, 85% of African American participants rating themselves as ageing successfully, and 69% of Chinese American participants reporting that they had aged successfully. Taken together these findings suggests that, for many, physical functioning may not be pre-requisite of successful ageing, and also that adaption, acceptance, psychosocial resources and cultural values play a role in an individual’s evaluation of their success. Qualitative research among older adults also supports the assertion that the Rowe and Kahn model lacks the multidimensional considerations that many older people consider essential for successful ageing (Bowling, 2009; Pruchno, Wilson-Genderson, & Cartwright, 2010).

In response to the perceived lack of breadth offered by the Rowe and Kahn (1997) definition, Pruchno and colleagues (2010) proposed a two-part model that includes subjective and objective measures. Although this suggestion relaxed the strict Rowe and Kahn definition somewhat by reducing the objective measures to having few chronic conditions, maintaining functional ability, experiencing little pain, and included subjective ratings of how successfully one has aged, this definition has also been challenged as lacking cross-cultural generalisability (Iwamasa & Iwasaki, 2011). As an alternative, Iwamasa and Iwasaki undertook an ethno-graphic grounded-theory approach in interviewing 77 older Japanese American adults about their perceptions of
successful ageing. A total of 10 focus groups were conducted, and in order to reduce the likelihood of participants adhering to traditional Japanese gender-roles, three groups were run for men and seven for women. Participants were encouraged to speak the language in which they were most comfortable. The authors noted that during the discussions many culturally unique ideas were reported especially around diet, exercise, spirituality and financial stability. Following the study, Iwamasa and Iwasaki proposed a new multi-dimensional model comprising six components. The final model included measures of physical, psychological, social and cognitive health similar to the earlier model proposed by Rowe and Kahn (1997), but also included dimensions of relating to sociocultural experiences such as spirituality and financial aspects of successful ageing, not previously reported (Iwamasa & Iwasaki, 2011). This model has subsequently been replicated in a study by Hilton et al., (2012) examining successful ageing in a Latino population.

In contrast to academic models of successful ageing, it is apparent that older people themselves define successful ageing as comprising a much broader range of factors, including psychosocial constructs, such as happiness, independence, spirituality and financial security (Feng, & Straughan, 2017; Iwamasa & Iwasaki, 2011); self-acceptance and engagement with life (Reichstadt, Sengupta, Depp, Palinkas, & Jeste, 2010); and maintaining a good social network (Jopp, Wozniak, Damarin, De Feo, Jung, & Jeswani, 2015). Furthermore, in an editorial exploring conceptual expansions of the original successful ageing model, Rowe and Kahn themselves acknowledge the potential role of ‘macrosocial influences’ such as economic conditions, access to high-quality affordable health care, public transportation, and urban design may play in assisting individuals to age successfully (Rowe & Kahn, 2015). These discrepancies are important as models of successful ageing contribute to decisions about public policy and service development for older
people (Foster & Walker, 2015), and therefore need to capture a diverse range of older people’s perspectives.

Another criticism of the Rowe and Kahn (1997) model relates to its inherent individualism, and more specifically its emphasis on the importance of individual choices in managing the experience of ageing (Jolanki, 2009). Critics argue that this ignores the social, economic and cultural contexts of people’s lives (Minkler, 1990; Minkler & Fadem, 2002; Schafer & Ferraro, 2012) and may be construed as judgmental and value laden (Breheny & Stephens, 2010; Holstein & Minkler, 2003; Lamb, 2014). While the image of healthy, successful ageing is appealing to many, it is argued that the current conception relies on individuals experiencing a fortunate set of circumstances whereby they have the physical, financial and mental means to pursue lifelong health and activity (Minkler, 1990; Stone, 2003). Furthermore, it has been argued, that the current model’s overemphasis on independence and longevity leads to a denial of ageing and sets up many of those who are unable to function independently, or who may be experiencing age-related decline for feeling a ‘failure’ (Lamb, 2014).

One of the more important limitations of the Rowe and Kahn (1997) model of successful ageing is that, with its origins in the medical model, it specifically excludes those who are ageing with a disability as the model requires individuals to be free of disease or disability, have high cognitive and physical functioning; and to continue to be actively engaged in life in order to be considered successful (Rowe & Kahn, 1997). It must be pointed out that the exclusion of people with disabilities was deliberate: in proposing the model the authors sought to stimulate research into ‘normal’ ageing, and more specifically demonstrate that illness and frailty were independent of the ageing process itself (Putnam, 2002). Thus they wished to exclude those they considered to be
ageing into disability due to what they considered poor lifestyle choices (Rowe & Kahn, 1997).

While the aim of stimulating research into normal ageing has been achieved, it may be argued that this approach has also resulted in two additional unanticipated and unwelcome outcomes. Firstly, the Rowe and Kahn (1997) definition of successful ageing appears to support the notion that disability may best be viewed as a problem of the person, rather than as a problem that occurs in a social context. Moreover, in applying such a broad exclusion criterion (e.g. the absence of disease or disability) there is an explicit suggestion in the Rowe and Kahn (1997) model that individuals affected by disability and disease may not be considered to be ageing successfully. Indeed, it may be argued that the model endorses the idea that disease and disability are defects that an individual has some control over. Yet as previously discussed, disability is often reflective of an impairment, present from birth, or occurring as the result of an accident during a person's lifetime. It has been argued that by ignoring those with early-onset disabilities (e.g. impairments occurring before age 50) the model also promotes the continuing marginalisation and stigmatisation of this segment of the population (Minkler & Fadem, 2002). Secondly, the overwhelming focus on ‘normal’ or ‘successful’ ageing has almost certainly limited research into ageing with disabilities (Stone, 2003). It could therefore be argued that the Rowe and Kahn (1997) definition of successful ageing, representing as it does a medicalised view of success, serves to perpetuate existing negative stereotypes of disability, thereby creating an unrealistic expectation that individuals with an impairment simply cannot hope to achieve. This is particularly troubling, given that we are now seeing greater numbers of individuals with disabilities and impairments enter the ranks of old age (Campbell, 1996; Haveman et al., 2009).
Selective Optimisation with Compensation (SOC)

In a departure from the Rowe and Kahn (1997) model, another influential model, Selective Optimisation with Compensation (SOC) (Baltes & Baltes, 1990) redirected the focus of successful ageing away from formulating criteria (e.g., Rowe & Kahn, 1987; 1997) towards identifying the possible processes involved. Baltes and Baltes (1990) conceptualised successful ageing as being able to balance gains and losses as one ages, such that individuals are able to continue to pursue activities that are meaningful to them. Similar to the Rowe and Kahn (1997) model, Baltes and Baltes (1990) also argue as people reach older ages they may be able to compensate for declines, seeing them as dynamic players in the ageing process who may proactively act to offset functional losses associated with ageing-related deficits (Baltes & Baltes, 1990). As such, older adults are not perceived as merely enduring age-related declines; rather, it is argued that they continue to actively engage in society by adapting and overcoming difficulties.

The SOC model asserts that an individual’s resources – be they mental, physical, environmental or social – are finite and that, at any given time, opportunities (e.g., employment) or losses (e.g., age-related limitations) occur that mean individuals must make choices about how these limited resources are allocated. It is further argued that as one gets older, personal resources tend to become more scarce, and, as such, it becomes increasingly necessary to develop a coherent hierarchy of goals and committed actions. The authors argue that individuals are able to age successfully by using three behavioural mechanisms – selection, optimisation, and compensation – to adapt to the usual biological deficits that are associated with age-related decline and thus offset or reduce the limitations placed on personal resources (Baltes & Baltes, 1990).
In this regard selection requires choices to be made in terms of which goals to pursue. Moreover, the authors argue that selection may be subdivided into two categories: elective selection and loss-based selection (Baltes & Baltes, 1990). Elective selection is posited to occur when the selection of goals is based on an active choice rather than in response to a loss (e.g., choosing a holiday instead of a new car purchase). Loss-based selection on the other hand is argued to occur when an individual feels pressurized to change their goals in response to changes in the individual’s environment or functioning (e.g., physical limitations or lack of money mean goals may be adjusted). Advocates of SOC contend that as age-related declines in functionality occur, individuals who are ageing successfully are able to effectively reduce their life domains to those areas that remain their highest priority (Baltes & Baltes, 1990). Selectivity is therefore seen as an adaptive process, facilitating success in the areas of greatest importance to the individual. This in turn enhances an individual’s sense of subjective well-being, life satisfaction and control, despite any limitations or restrictions they may otherwise be facing.

Optimisation, refers to the enhancement of resources needed to achieve goals, and engagement in behaviours that maximize one’s capacity to maintain functioning in spite of age-related limitations. Examples of this might include doing the daily crossword puzzle as a means of retaining cognitive functioning or becoming more extrovert to increase social networks) (Staudinger & Pasupathi, 1998).

Compensation, involves using compensatory processes or devices (including mobility aids and equipment) to maintain a certain level of functioning when faced with losses due to age-related limitations (Baltes, 1997; Baltes & Baltes, 1990). Thus, individuals may transition to using a mobility scooter or wheelchair to facilitate continued mobility in the face of declining physical abilities as an example of
compensation. In his paper on continuity theory, Atchley explained how a participant in the Ohio Long-Term Care Research Project compensated for physical problems and substantial age-related deterioration by altering her expectations, watching more television and using assistive equipment to help maintain functionality (Atchley, 1999). He argued that in this way, his participant was able to maintain continuity and stability, thus retaining a sense of satisfaction with life in spite of increasing limitations (Atchley, 1999).

**Empirical evidence for and against SOC**

In the Berlin Ageing Study (BASE), a study designed to examine the differences in ageing and everyday functioning between older adults judged to be resource-rich and resource-poor, Baltes and Lang (1997) used a cross-sectional design to survey 516 individuals aged 70 to 102 to investigate the impact of psychosocial resources on everyday functioning and life satisfaction. Previous research has demonstrated that as a person ages, losses in different areas impact day-to-day functioning, thus continued adaption is required to ensure successful ageing (Baltes & Cartensen, 1996; Baltes & Baltes, 1990). Baltes and Lang posited that it is the availability of sensorimotor, cognitive, personality and social resources that influence how effectively an individual is able to adapt to these age-related losses. Participants were asked to recall, in order of occurrence, all activities undertaken the previous day, including duration of time spent in the activity, where it occurred and with whom it was undertaken. Information on resources was also assessed. Sensorimotor resources were assessed on three criteria: visual acuity, auditory acuity and balance-gait. To assess cognitive resources and reasoning, figural analogies, letter series and practical problems were completed, to yield a measure analogous to the concept of general intelligence (Lindenberger, Mayr, & Kliegl, 1993). A six-item German adaption (Borkanau & Ostendorf, 1990) of the
extraversion subscale of the NEO-Personality resources (Costa & McCrae, 1985) was used to assess personality and social resources were rated based on: 1) social support received during the preceding three months; 2) role variety reported; and 3) social status a proxy measure of which was assessed using the Wegener Prestige Scale (Wegener, 1988) which measured occupational status either of their own last occupation, or that of their husband, if higher, for married and widowed women.

Findings suggested that those who rated lower in terms of sensorimotor-cognitive and psychosocial resources such as extroversion, social roles and connectedness were more likely to experience a decrease in everyday functioning relative to those who scored higher in these resources (Baltes & Lang, 1997). The authors argued that the biopsychosocial resources acted as a protective buffer, partially shielding participants from the negative effects of age-related limitations, such that those with more biopsychosocial resources are able to age successfully by making greater use of selection, optimisation, and compensation processes and thus delay ageing declines (Baltes & Lang, 1997). In essence, the authors contend that the greater the resources available, the easier it is for individuals to use selection, compensation, and optimisation strategies to substitute or adjust goals, so that they are able to age successfully by continuing to attain those goals selected as the most important. A longitudinal study provided support for these results, finding that older adults (aged 70 to 103 years old) with more sensorimotor and psychosocial resources used a greater number of compensation and optimisation strategies compared to people with fewer psychosocial and sensorimotor reserves (Lang, Rieckmann, & Baltes, 2002).

Importantly, the differences remained after controlling for age, and the authors further suggested that a greater availability of resources allowed participants to choose the most rewarding activities thus maximising their sense of wellbeing (Lang et al., 2002).
Additional studies have also sought to examine the use of SOC strategies in older populations more directly. In a cross-sectional study of 200 older people aged between 72 and 103 years old, participants were asked to complete a self-report SOC-questionnaire outlining the strategies they used regularly to manage their lives (Freund & Baltes 1998, 1999). Results showed that, even after controlling for age, control beliefs, subjective health and personality, higher reported use of SOC strategies was moderately to highly, positively correlated with satisfaction with age, positive emotions and absence of social and emotional loneliness. Most notably, optimisation and compensation provided the greatest contribution to wellbeing, although use of these strategies was observed to decline at older ages (Freund & Baltes, 1998, 1999). Additional cross-sectional studies with 218 and 181 individuals respectively provided further support for these results; finding in both cases that a moderate, positive relationship existed between self-reported use of SOC strategies, positive affect and subjective well-being (Freund & Baltes, 2002). Again, it should be noted, however, that use of self-reported SOC strategies were found to decline at older ages (e.g., after age 67) (Freund & Baltes, 2002). Thus, even at older ages participants still reported engaging in goal setting, selecting the optimum number of goals on which to focus and prioritising based on their perceived value and importance (Freund & Baltes, 2002). These findings suggest that at older ages the accumulating biological and physical limitations experienced by many may act as a constraining force on an individual’s ability to undertake SOC behaviours. After all, as the research has demonstrated (Baltes & Lang, 1997), the use of SOC may be related to the resources (both internal and external) available to the individual. As age-related losses accumulate the physical, social, and cognitive resources available to individuals in old age may no longer be sufficient for them to engage in SOC related behaviours. Thus, for older adults the opportunity and ability to use SOC-related behaviours may decline. Interestingly, the
study also revealed that elective selection, unlike the other SOC-strategies, continued to increase albeit moderately in older adulthood. The authors suggested that a sharper focus at older ages may account for the positive relationship between age and elective selection such that older adults becoming more focused and driven to achieve their highly valued goals (Freund & Baltes, 2002).

Most notably for this study, the SOC-model has also been tested to determine its utility for explaining how older adults adapt to late-life disability. In 2002, Gignac and colleagues undertook a cross-sectional study examining the behavioural adaptations of 248 adults aged 55 years and older with osteoarthritis (Gignac, Cott, & Bradley, 2002). The authors found that participants who incurred the greatest levels of disability often used compensation strategies such as assistive devices to maintain functioning. Again, this study also provided additional evidence that optimisation strategies including planning activities and walking to avoid pain, were also frequently used. Importantly, however, the model’s authors note that SOC is aimed at helping to identify ways in which normally ageing older adults may successfully adapt to and manage age-related declines, including late-onset disability rather than ways of coping with long-term disabilities (Baltes & Baltes, 1990). Thus it appears that the authors have once again overlooked the experience of ageing with a disability.

The above studies suggest that the association between compensation, optimisation and successful ageing is complex and likely to be more so for those ageing with a long-term disability. On the one hand, it is clear that compensation and optimisation strategies are associated with successful ageing. However, on the other hand, there is also evidence from able-bodied cohorts that these strategies may potentially be less effective in advanced years as a result of reduced opportunities and accumulating losses such as those associated with increasing disability (Freund &
Baltes, 1998, 1999, 2002). It may be suggested, however, that for those older adults ageing with a disability who are likely to have consistently employed and relied on selectivity, optimisation and compensation strategies to maintain day to day functioning for many years, these learned and oft practiced behaviours may be more habitual and thus persist for longer in later life.

A systematic review of psychological models of successful aging conducted by Ouwehand, de Ridder, and Bensing (2007) confirmed that although SOC is a prominent successful ageing model, the empirical support remains limited and more research is necessary. It is hoped that this thesis may contribute to the empirical studies, as it is anticipated that the SOC model may potentially help explain and extend the successful ageing model to those ageing with a disability.
CHAPTER 4: AGEING WITH A DISABILITY

This chapter provides an overview relating to the demographics of disability before examining the current literature pertaining to ageing with a disability. In doing so, the medical and social models of disability are introduced and explored in relation to the differing research disciplines of gerontology, disability, and rehabilitation. It is argued that the current schism in approaches has led to a gap in knowledge relating to the experience of ageing with a disability and the dimensions or factors that may contribute to successful ageing for those ageing with a disability.

Demographics of disability

The World Health Organisation estimates that around one billion people or about 15% of the world's population live with some form of disability (WHO, 2018). Of these, it is estimated that up to four per cent experience significant difficulties in functioning (WHO, 2011). Exact figures are somewhat elusive however due to the differing methodologies used to measure disability. Using statistics produced using the World Health Survey for example, the WHO suggests that approximately 785 million (15.6%) individuals aged 15 years and older live with a disability. Statistics from the Global Burden of Disease put this number even higher, estimating that approximately 975 million (19.4%) individuals live with a disability (WHO, 2011). Moreover, the World Health Survey estimates that 2.2% or 110 million people experience very significant difficulties in functioning due to conditions such as quadriplegia, severe depression, or blindness. Meanwhile the Global Burden of Disease estimates the same figure at 190 million (3.8%) (WHO, 2011). Within Australia, approximately one in every five people (4.2 million people or 18.5% of the population) reported having
some level of disability in 2012, with an additional 4.7 million people (21%) reporting a long-term health condition that did not restrict their daily activities (ABS, 2015).

More recently, with continuing improvements in medical treatments and residential care, a greater number of individuals with differing levels of physical disabilities and impairments are living into their 60s and beyond (Campbell, 1996; Haveman et al., 2009). This has, in effect, created a growing category of older persons – those ageing with disabilities or impairments (Putnam, 2002). This group comprises individuals who acquire a disability or impairment at a younger age, and live with that impairment throughout the majority of their lives (Campbell, 1996), and contrasts with those who have acquired disabilities in later life. To date, though, there is a paucity of research into how these individuals who are ageing with a disability perceive ageing success and indeed, what, if any, internal mechanisms or buffers are able to assist them in the process. Indeed, understanding how individuals make sense of ageing successfully in the context of disability and age-related changes can give voice to those who have to deal with navigating this new landscape.

**Defining disability**

There are various ways in which the terms “disability” and “impairment” have been defined. Taking the lead from the World Health Organisation’s (WHO) International Classification of Functioning, Disability and Health (ICF), here the terms are used to describe individuals who have a physical condition (e.g. problems in body function or structure) that limits movement, senses, or participation in activities (WHO, 2018). Historically, two distinct research traditions have emerged in response to understanding how disability affects individual development and psychosocial adjustment across the lifespan. These can be described as the medical model and the social model of disability (see Figure 1).
**Medical Model**

Disabled people as passive receivers of services aimed at cure or management

- Training centres
- Sheltered workshops
- Special schools
- Benefits agency
- Occupational Therapists
- Speech therapists
- GPs
- Doctors
- Social workers
- Child Development team
- Specialists
- Educational psychologists
- Surgeons
- Special transport

**Social Model**

Disabled people as active fighters for equality, working in a partnership with allies

- Inaccessible information
- Inaccessible environment
- De-valuing
- Prejudice
- Lack of useful education
- Discrimination in employment
- Poverty
- Segregated services
- Belief in the medical model
- The structures within society are the problem

**Figure 1.** Medical versus social perspective of disability

Published in: ‘Medical Model’ vs ‘Social Model’ on February 27, 2007 attitudes2disability.wordpress.com/category/medical-model-vs-social-model/
The medical model has historically perceived those with disabilities as having a health-related problem or condition that needs to be fixed. In this model, disability is considered to be a problem for the affected individual, and is not considered to be an issue for anyone else. Thus, if an individual requires the use of a wheelchair and is therefore unable to access a building due to a step, the medical model would argue that the individual requiring a wheelchair has the problem, rather than there being a problem with the steps. The social model of disability on the other hand, would define the step as a disabling barrier that prevents individuals with disability from participating freely in society. The social model argues that it is society that disables people by inadvertently designing everything from buildings, systems and processes to meet the needs of the non-disabled majority, while overlooking the needs of those who have an impairment. Within the social model of disability, the emphasis is placed on society to reduce, and ultimately remove, some of these disabling barriers, rather than it being the responsibility of the disabled person. Yet, despite the perceived positive nature of the disability tradition, whereby individuals with disabilities have developed a strong social identity that seeks to bring about positive changes in attitudes, systems and laws as a means of reducing marginalisation and stigma (Brown, 2002), some researchers argue that the majority of the research undertaken to date has been grounded in the medical model – a model, which has itself been criticised for placing the onus of disability on the individual (Olkin, 1999). In a review of dissertations undertaken on disability between 1954-1993, Olkin (1999) determined that more than 95% (2,350) were based on this somewhat contentious model. In general, concerns arise based on the medical model’s limited definition of disability as: an abnormality, a pathology, an impairment or defect, as a physical or emotional limitation, or as a loss of function (Altman, 2001; Linton, 2006; Olkin, 1999; Turner, 2001). Within this, the following four main etiological classifications of disability have also been defined:
inherited (e.g. a genetic condition); congenital (potentially due to an infection during gestation, a foetal developmental irregularity, or perhaps due to an injury during or soon after birth; acquired (e.g. as a result of an illness or injury); or due to an unknown cause (Funnell, Koutoukidis, & Lawrence, 2008).

While proponents argue that the medical model has made major contributions to understanding and alleviating disability through improved medical treatment and planning (Linton, 2006; Olkin, 1999), critics argue that it has also led society to conceive of disability as a social burden and personal tragedy that must be overcome by the individual (Asch, 2001; Drake, 2001; Gill, 2001; Linton, 2006). It is argued that by taking such a biological stance, the medical model has promoted the perception that disability is a dysfunction situated solely within the individual’s body (Pledger, 2003). Critics argue that this has resulted in much of the disability research being targeted at simply alleviating or reducing the problem, so the individual can live with the disability, albeit in an able-bodied society (Olkin, 1999; Pledger, 2003). The pervasiveness of this approach is possibly best reflected in the adoption of the medical model by the legal community. Mirroring the medical model’s use of impairment as the basis for defining and understanding disability, in Australia, state legislation including the Disability Act 2006 (Vic), the Disability Inclusion Act, 2014 (NSW) and the Disability Services Act 2006 (Qld) all define disability as an impairment that may be physical, sensory, intellectual, psychiatric, cognitive or neurological in nature, and which results in a substantially reduced capacity for self-care, self-management, social interaction, learning, mobility and/or communication. Evaluation of disability is therefore based on individual performance or functional status.

In contrast to the medical model, the social model of disability removes the primary focus of adjustment from the individual, instead asserting that disability
reflects a negative intersection of the individual with the physical, social, economic and political environment (Artman & Daniels, 2010; Olkin, 1999). The most widely accepted definition, the International Classification of Functioning, Disability and Health (ICFDH), states that disability represents an overarching construct reflecting not only impairments (e.g. a problem in body function or structure), but also activity limitations (such as difficulties being able to complete a task or action), and participation restrictions – such as access and transport problems which hinder an individual’s capacity for social and occupational involvement (WHO, 2018). Thus, it is argued that disability is not simply a health issue but a more complex phenomenon, reflecting an interaction between features of a person’s body and features of the society in which he or she lives (World Health Organisation; WHO, 2018). Under the social model, it is incumbent on society and the environment to also adapt to allow the full participation of all its citizens (Hahn, 1999; Longmore & Umanski, 2001; Olkin, 1999).

Proponents of the social model argue that, when society accepts disability as a medical problem, treatment focuses on the individual, rather than on examining societal attitudes and policies that influence and determine the individual’s environment and identity (Linton, 2006; Longmore & Umansky, 2001; Olkin, 1999; Pledger, 2003). They argue that adjusting to a disability involves addressing pervasive attitudes and systematic biases that debase the position of people with disabilities (Asch, 2001; Gill, 2001; Olkin, 1999). Proponents of the social model assert also that, although the medical model may have a place in medical settings, when applied to political, legal and social environments, it can be harmful to the individual (Olkin, 1999), exerting its influence not only in the rights of individuals with disabilities but also in how society views and treats them (Linton, 2006; Olkin, 1999).
Monahan and Wolf (2014) argue that gerontology – currently the dominant field of study examining successful ageing – has for the most part examined the experiences of individuals who are ‘ageing into disability’ after a lifetime of being fully functional. They argue that gerontology implicitly relies on the medical model for understanding disease and exploring the course of loss and function. The authors further argue that this has seen gerontology evolve to develop an implicit focus on loss, and in particular, loss of autonomy, and, in some cases, the loss of the capacity for self-care. In contrast, the authors note that the disability tradition adopts the social perspective and thus has typically examined the experiences of those ‘ageing with a disability’ (i.e., those that are born or acquire a disability before or during middle age) (Monahan & Wolf, 2014). The authors argue that this positions the disability tradition as a more positive approach, one that emphasises the adaptive processes involved in gaining and maintaining a level of independence despite what may be longstanding or even lifelong disability conditions (Monahan & Wolf, 2014).

**Examining the experience of ageing with disability**

Relatively little is known about how the experiences of individuals with disabilities influence their perceptions of ageing and what it means to them to age successfully. Stiker (1997) argues that one possible reason for the lack of research in this area is due to the historic perspective of the rehabilitation and medical community which, until recently, viewed many impairments as static conditions that individuals learn to cope with after an initial adaptation period. The field of rehabilitation, in particular, has been criticised for representing a once and for all approach, which assists individuals to reach their maximum functional ability, but then assumes the status quo will be maintained and thus does little to address further decline over the longer-term (Stiker, 1997; Williams & Busby, 2000). Likewise, literature focusing on
adaptation to illness or injury has also tended to concentrate on short-term perspectives (Bury, 1982; Priestley, 2003). This lack of knowledge creates important gaps in our ability to serve the ongoing needs of this potentially vulnerable population.

Complicating matters, the term ‘disability’ covers an extremely diverse range of conditions, impairments, limitations and restrictions, many of which are likely to impact an individual’s experiences and opportunities depending on factors such as the timing of the disability onset, illness complications and even survival chances. For example, Bogart (2014) surveyed 226 participants with congenital and acquired mobility disabilities, finding that time of onset, but not duration of disability, was significantly related to satisfaction with life, suggesting that experiencing disability from birth or early in life may lead to better adjustment and satisfaction with life over the longer term. Yet studies have shown that younger and middle-aged people with physical disabilities encounter a wide range of obstacles and interpersonal experiences, such as stigma, isolation and lack of opportunity that potentially may negatively affect their physical and psychosocial wellbeing (Ferguson, 2001; Gill, 2001). Indeed, it may be argued that differences in attributes, such as current chronologic age, age at disability onset, duration of disability, the progression of the illness or injury, the social support available and the nature of any government assistance that individuals have access to are likely to create distinct developmental and ageing pathways for those ageing with a disability relative to those ageing into disability. The following sections aim to highlight key themes in the literature, including health-related difficulties, psychological impacts, and psychosocial consequences, all of which are likely to interact with ageing with a disability.
Health-related difficulties associated with having a disability

People living with disabilities, may not only experience greater longevity than at any other period in time, but also new and often unanticipated age-related health conditions, such as fatigue, pain and weakness (Cook, Molton, & Jensen, 2011; Kemp & Krause, 1999). Importantly though, for people ageing with disabilities, medical problems may begin to appear as early as 15 to 20 years before those experienced by age-matched, non-disabled groups (Kemp & Mosqueda, 2004; McColl, Rosenthal, & Rowe, 1995; Yorkston, 2010). It is suggested that these changes reflect an ‘accelerated ageing’ phenomena (Groah, Charlifue, Tate, et al., 2012), which may in turn influence an individual’s perception of successful ageing.

Kemp and Krause (1999) argue that these problems are best described as ageing-related issues resulting from undetected disease, over-use of muscles or joints leading to wear and tear problems, environmental factors, such as societal, community and cultural issues, or an interaction of all three. Building upon this early conception, Molton and colleagues (Molton, Terrill, Smith, et al., 2014) collected data from 1,862 adults with long-term physical disabilities including spinal cord injury, neuromuscular disease, multiple sclerosis and post-polio syndrome. The research identified five types of changes that people ageing with a disability are likely to experience as they grow older. These included pain and functional impairments, in part as a result of deteriorating of joint, sensory and connective tissues, as well as secondary complications of the original illness or injury, such as septicaemia. Participants were also at elevated risk of chronic medical conditions, which, although unrelated to the original illness may reflect restrictions or poor health behaviours over the person’s life. These include many conditions experienced by both disabled and able-bodied persons alike, such as diabetes and hypertension. Lastly, the data also revealed a number of
psychosocial secondary health conditions such as issues related to depression, fatigue and sleep difficulties (Molton et al., 2014). These findings support an earlier review by Groah, Charlifue, Tate, et al. (2012), which identified a number of common secondary health conditions within the SCI community, all of which greatly impact an individual’s health and wellbeing. These include obesity, septicaemia, respiratory problems, depression, heart disease and diabetes. Research has demonstrated that individuals ageing with a disability are more likely than those without disabilities to engage in poor health behaviours during midlife (e.g., smoking, obesity and sedentary lifestyles), resulting in an increased risk of developing chronic health problems over the longer-term (Clarke & Latham, 2014). A growing concern is that heart disease is now one of the leading causes of death among people with SCI (Bauman, Adkins, Spurgeon, Kemp, & Waters, 1998; Groah, et al., 2012; Sasma, Patrick, & Feussner, 1993).

Additionally, for women ageing with a spinal cord injury, age-related changes in bone density are further compounded by SCI and decreased weight bearing, placing them at a much greater risk of osteoporosis and fractures relative to their non-disabled and male counterparts (Boling, 2001; Garland et al., 2001; Ott, 2001). Bladder function, continence and urinary tract infections have also been found to become more troublesome in women with SCI as they age (Valiquette, 2001). It is estimated that approximately 50% of people with SCI experience some of these changes, while 60% to 70% of people with a history of polio encounter similar problems (Amsters, Pershouse, Price & Kendall, 2005; Berly, Strausser, & Hall, 1991; Gerhard, Bergstrom, Charlifue, Menter, & Whiteneck, 1993; Halstead & Grimby, 1994; Murphy, Molnar, Lankasky, 1995). These changes can lead to new challenges to independence as existing limitations are exacerbated over time.
Importantly, Clarke and Latham (2014) found that the combination of midlife health challenges, plus greater socioeconomic hardship faced by individuals ageing with a work limiting disability, accounted for over 30% of the variance in subjective health ratings between those ageing with or without a disability by ages 50-64 (Clarke & Latham, 2014). Thus, it appears that the disadvantages experienced by those ageing with a disability have wide-ranging and potentially serious effects; ultimately impacting health, quality of life as well as social and economic wellbeing over the life course (Clarke & Latham, 2014).

**Psychological factors associated with having a disability**

Living with a disability is associated with a wide range of psychological reactions that have been measured in various ways, ranging from depression scores to subjective wellbeing scores. Subjective wellbeing (SWB) is defined as an individual’s perception of the quality of their life, based on a multidimensional evaluation of their life as a whole (Eid & Diener, 2004; Diener, Napa Scollon, & Lucas, 2009). It is argued that this evaluation reflects cognitive judgments and affective appraisals of the ongoing events in a person’s life (Diener et al., 2009). Broadly speaking, psychological factors that influence an individual’s sense of wellbeing and satisfaction with life can be grouped into two main areas: those that relate to the experience of positive and negative emotions (e.g., happiness and depression), known as the ‘hedonic’ factors, and those that are more oriented towards achieving a sense wellbeing as a result of personal growth, contribution and striving for personal goals, referred to as ‘eudaemonic’ factors (Lyubomirsky, Sheldon, & Schkade, 2005).

To date, studies that have considered ageing with a disability have generally used factors such as the level of depressive symptoms as a proxy measure of an individual’s level of wellbeing (Bogart, 2014; Charlifue, Weitsenkamp, Whiteneck, 1999;
Cummins, 2001; Kahan, Mitchell, Kemp, & Adkins, 2006, Kemp & Krause, 1999; Krause, 1998; Krause & Broderick, 2005; McColl, Arnold, Charlifue, Glass, Savic, & Frankel, 2003; Salakibara, Hitzig, Millwe, Eng, and the SCIRE Research Team, 2012). Several studies have suggested that ageing with a disability negatively affects a number of indices of well-being, such as satisfaction with life and depression (Amtmann, Bamer, Verral, Salam, & Borson, 2013; Fuhrer, 1994; Siegel et al., 2016). Moreover, comparisons between the wellbeing of individuals ageing with an SCI and that of their non-disabled peers has consistently found the rates of depressive symptomatology to be significantly higher in the SCI population (Dijkers, 1997; Fuhrer, 1996; Fuhrer, Rintala, Hart, Clearman, & Young, 1993; Kemp, Adams & Campbell, 1996; Kemp & Krause, 1999; McColl & Rosenthal, 1994; Tate, Forchheimer, Kirsch, Maynard, & Roller, 1993). These studies have, however, been criticised for being cross-sectional in nature, and thus failing to adequately control and account for the interactions between age, time since injury and cohort effects (Weitzenkamp, Jones, Whiteneck, & Young, 2001). Factors that cause embarrassment, dependence and practical restrictions, such as severe pain, mobility issues, incontinence and fatigue have been found to inhibit social participation, increase the risk of depressive symptomatology and affect an individual’s sense of wellbeing (Albrecht & Devlieger, 1999; Hahn, Aronow, Rosario, & Guenther, 2013; Lynch, Wong, Anthony, Dobbs, & Frizelle, 2000; McColl, Walker, Stirling, Wilkins, & Corey, 1997; Ville et al., 2001; Westgren & Levi, 1998).

A number of studies have sought to address some of these concerns. For example, a study conducted by Krause, Kemp and Coker (2000), that investigated the relationship between depression and ageing with a spinal cord injury found a curvilinear relationship between depressive symptoms and years since injury. The highest levels of depressive symptoms were observed among those with the least and
most years since injury, perhaps because those most recently injured have had
insufficient time to adjust to the changes experienced as a result of an SCI, while those
who have lived with an SCI for the longest, may have had to adjust to additional
changes experienced with the onset of secondary conditions related to ageing.
Although these findings reveal a complex relationship between time since injury and
depressive symptoms, Krause, Kemp and Coker (2000) clarify that the level of
depressive symptoms reported did not meet criteria for a diagnosis of major depression
as defined by the Diagnostic and Statistical Manual of Mental Disorders (American
Psychiatric Association: DSM-IV). In follow-up studies, it was found that life
satisfaction for SCI survivors improved throughout the life-cycle, even beyond 30
years post injury (Krause & Broderick, 2005; Krause & Coker, 2006).

Taken together, these findings suggest that there may be an adaptive process that
operates over time to assist individuals ageing with a disability regain a sense of
equilibrium. Albrecht and Devlieger (1999) introduced the term ‘disability paradox’ to
account for their findings that for many individuals with disabilities satisfaction with
life remains high. They argued that their results reflect a disparity between the
expectations of outside observers who often equate disability with a poor quality of
life, and the reality that over 50% of individuals surveyed (N = 153) who were living
with a disability reported an excellent or good quality of life. Importantly this
relationship remained despite the participants with disabilities reporting persistent
discrimination, serious limitations and problems performing social roles (Albrecht &
Devlieger, 1999).

On the face of it, the findings that depressive symptoms and quality of life for
those living with disabilities improve over time appear somewhat counter-intuitive
when considering the clear relationship between duration of disability and a number of
important physiological outcomes and overuse syndromes (Krause, 1998; Pentland, McColl, & Rosenthal, 1995). Yet, it appears somewhat paradoxically, that despite the physical toll, the longer one lives with the disability, the greater the reported life satisfaction and quality of life reported. In their analysis, Albrecht and Devlieger (1999) found that maintaining a balance between body, mind and spirit, retaining good social relationships and a supportive environment all contributed to achieving a positive quality of life. Both quality of life and life satisfaction are argued to tap into not only an individual’s level of satisfaction with their life, but also eudaemonic factors such as adaption, growth and challenge (Diener, Emmons, Larsen, & Griffin, 1985). Empirical studies have increasingly demonstrated that eudaemonic factors such as these are positively related to not only to good mental health but also the ability to adapt to ones’ life circumstances, act pro-socially and find meaning and purpose (Fredrickson, 2001; Lyubomirsky, Sheldon, & Schkade, 2005; Nelson, Layous, Cole, & Lyubomirsky, 2016; Fredrickson, 2001). Qualitative research investigating the changes and adjustments required when ageing with a disability, found that despite experiencing health issues earlier than their non-disabled peers, participants reported positive psychosocial adaption over time (Yorkston, 2010). For some participants this meant identifying with their disability group, while others noted that they felt as though they had lived a full and normal life and did not see themselves as being any different from how they were before their disability. Participants also demonstrated significant positive psychosocial adjustment including the development of emotional wellbeing and compensation strategies (Yorkston, 2010). In a larger study, \( N = 226 \), self-esteem, disability self-efficacy and disability identity were the best predictors of the overall satisfaction with life score (Bogart, 2014), suggesting that eudaemonic factors of subjective wellbeing may indeed play a role in adaption to disability and thus may also contribute to a sense of ageing well.
Psychosocial consequences of living with a disability

Work-related consequences

A recent study by Clarke and Latham (2014) found that individuals who were ageing with a disability had fewer years of education and experienced more difficulties in regards to the amount or types or work they were able to undertake. Moreover, those with long-term work-limiting disability prior to age 50 were found to have higher rates of unemployment and lower household incomes over adulthood (Clarke & Latham, 2014). These findings fit with data reported by the Australian Bureau of Statistics (ABS). According to ABS figures in 2012 only 52.8% of working-age people (15-64) with a disability were employed, as compared with 82.5% of working-age people without a disability (ABS, 2015). Generally, employed individuals living with a disability were also more likely than people without disability to work part-time (39.8% and 29.6% respectively) (ABS, 2015). Individuals with disabilities also report lower annual incomes than their non-disabled peers.

Social and relationship consequences

Research from the disability field consistently demonstrates that the ability for individuals with disabilities to participate in social and community activities positively correlates with fewer depressive symptoms and higher satisfaction levels (Conrady, Wish, Agre, Rodriguez, & Sperling, 1989; Fuhrer, Rintala, Hart, Clearman, & Young, 1993; Jensen et al. 2014; Tonack, et al., 2008). Longitudinal studies also provide evidence that accumulating health issues appear to interact with, and limit individuals’ abilities to undertake social and sexual activities, leading to an overall increase in dissatisfaction in these areas of life at 25 and 30 years post injury (Krause & Broderick, 2005; Krause & Coker, 2006). Clarke and Latham’s (2014) study also revealed that individuals ageing with a disability were less likely to marry. For
women, the interaction of age, gender and disability has been found to be particularly problematic, leading to heightened risks of depression (Hartkopp, Bronnum-Hansen, Seidenschnur, & Biering-Sorensen, 1998; Kennedy & Rogers, 2000). Potential explanations for this include findings that women with disabilities typically experience higher rates of divorce and separation than their male counterparts, are more are likely to remain single throughout their adult lives, and are more likely to be reliant on attendants for personal care (Shackelford, Farley, & Vines, 1998; Kreuter, 2000). They also have an increased likelihood of being reliant on social welfare for their income (Krause et al., 1999). Finally, researchers have observed that women with spinal cord injuries are significantly more likely to rely on others for transportation; a finding that is particularly important in terms of the ability to maintain autonomy and quality of life (McColl & Rosenthal, 1994).

**Adapting to a disability**

The above studies suggest that levels of depressive symptomatology and life satisfaction may be influenced by how well a person adapts and copes with the changes that occur as he or she ages. Coping and adapting are complex processes, involving a number of interacting components, including the amount and rate of life changes, attitudes towards the changes, coping strategies, underlying personality, self-esteem, optimism and level of social support they receive (Cummins & Nistico, 2002).

To date, the majority of rehabilitation and disability studies have been directed towards understanding issues associated with acute care and initial adjustment after injury or illness. Indeed, early models of psychosocial adjustment after injury such as those proposed by Fortier and Wanlass (1984) and Livneh and Antonak (1997) posited a sequential or staged process where individuals move through a predictable and finite series of steps with an implied positive trajectory. It is argued that individuals initially
face a period of shock and/or denial, followed by distress and finally the acceptance of their situation (Fortier & Wanlass, 1984). The premise of such theories has, however, been criticised in recent years as lacking empirical validity and sufficient complexity to explain the process of ongoing adaptations as a person ages (Kendall & Buys, 1998; Parker, Schaller, & Hansmann, 2003). Several problems with these theories have been identified. Firstly, many studies lack methodological rigour, and even Livneh and Antonak (1997) acknowledge that many of the articles included in their initial review were based on practitioner opinions, informal observations and correlational or case studies. Secondly, Trieschmann (1988) found that much of the literature on stage theories of adjustment to SCI, was based on the particular author’s clinical impressions and the resultant lack of data compromised the reliability and validity of the proposed stages, let alone their duration or progression. Trieschmann concluded that much of the research had failed to adequately capture the individual’s experience, thereby overlooking and underestimating the individual’s strengths and coping abilities (Trieschmann, 1988). Finally, although researchers have found a general trend towards acceptance of disability over time (Linkowski, 1971), stage models, in positing a series of unidirectional and sequential steps, are unable to adequately address the recurrent and individualistic nature of many psychosocial problems faced by those with disabilities (Kendall & Buys, 1998). Findings from qualitative research provide further support for the argument that adjustment is in fact consistent with current models of the grieving process, in that it is a unique and often circular process, typified by ongoing highs and lows as individuals continue to face new challenges (Kendall & Buys, 1998).

Moreover, modern conceptions of adjustment to disability have seen a shift in focus to recognise it as an often multifactorial and continuous life course, rather than a time limited process (Kendall & Buys, 1998). Indeed, Trieschmann (1988) proposed
that rehabilitation was best conceptualised as a life-long process, requiring ongoing adaptations to new challenges, including those found in the surrounding environment. More recently, Livneh and Antonak (2005) argued that the interaction of social-demographic and disability-related variables, together with personality attributes, and the physical/social environment ultimately assists or hinders an individual’s adaptation to disability. This model certainly appears more congruent with empirical research which supports the argument that psychosocial adaptation and adjustment to physical impairment is not a single event, but rather a personal one that continues over the life course as new functional limitations and pain symptoms emerge (Kemp & Krause, 1999).

**Current research on successful ageing with a disability**

Researchers are now beginning to explore more comprehensive models of ageing successfully. For example, Young, Frick, and Phelan (2009), proposed a conceptual model that takes into account the illness limitations typically acquired as an individual ages. Young and colleagues suggested that successful ageing could be defined as the ability to use physical and socially adaptive strategies “to achieve a sense of well-being, high self-assessed quality of life, and a sense of personal fulfilment even in the context of illness and disability” (Young, Frick, & Phelan, 2009, p. 88-89). Importantly though, the proposed model was developed by a panel of experts without input from those having a personal experience of ageing into, or with a disability. Thus, while this perspective addresses the limited dimensionality in the Rowe and Kahn (1997) model, it does little to address the paucity of research into the subjective experiences of those who are ageing with a disability.

In contrast, Molton and Yorkston (2017) directly investigated the subjective experience of ageing with a disability. The authors conducted nine focus groups over a
five year period (2009 to 2014) to gather the views of 49 middle-aged and older adults who were ageing with either an SCI (n = 14), post-polio syndrome (n = 11), multiple sclerosis (n = 21) or muscular dystrophy (n = 3). Participants ranged in age from 45 to 80 years of age (Mean Age = 62) and had lived with their disability for an average of 21 years. Focus groups were conducted face-to-face or via telephone and a discussion guide was used to elicit information related to what it means to age successfully with a long-term physical disability. Analysis of the transcripts revealed four dimensions that participants considered to be important for successful ageing: autonomy – described as the ability to maintain a sense of agency, choice and self-efficacy – was seen as a key component of successful ageing. Perhaps unsurprisingly, physical health was also identified as important to successful ageing and included subthemes relating to both optimising activities and compensating for physical health limitations, and retaining access to appropriate healthcare. An additional theme related to social connectedness and the availability of support and assistance from friends, family, peers and the wider social environment. The final theme – resilience and adaption – included the avoidance of depression, the ability to adapt to new circumstances and psychological resilience (Molton & Yorkston, 2017). This important work suggests a model of successful ageing that overlaps with, and yet is subtly distinct from, models of successful ageing reported by able-bodied participants. For instance, the authors reported that, whilst social connectedness has been shown to be an important component of successful ageing in able-bodied populations, the social connections described by participants in their study were more likely to include others with disabilities; simultaneously strengthening and scaffolding an individual’s disability identity and providing a sense of unity with others in a similar position (Molton & Yorkston, 2017).

Although Molton and Yorkston’s (2017) study provided some unique insights into the meaning of successful ageing to people ageing with disabilities, the authors
themselves point out a number of limitations that may limit the conclusions that could be drawn. In particular, the focus groups were undertaken as part of a broader series of studies, and some of the interview schedules focused on quite specific aspects of successful ageing, which may have reduced the diversity of the perspectives shared. In addition, the use of telephone and in-person group sessions may have led to some participants feeling less comfortable about sharing their views. The lack of non-verbal cues in telephone-based sessions may also have led to important non-verbal cues, and opportunities for follow-up questions being missed by the interviewer, thus restricting the richness of the data collected.

**Summary and introduction to the current study**

In summary, there remains a lack of research examining successful ageing in populations ageing with a disability, thus little is known about their experiences of ageing and the components of success. It remains unclear whether internal psychological mechanisms and traits are able to contribute to buffering the impact of ageing and the associated physiological decline. Most rehabilitation studies have only focused on younger individuals, and although these have identified a range of internal and external resources that assist in coping and adaptation in the initial stages of disability it is uncertain what, if any role, these play in individuals’ subjective assessment of their ageing success.
CHAPTER 5: AIMS AND RATIONALE OF THE STUDIES IN THIS THESIS

With increasing numbers of individuals ageing with a disability, the overarching aim of this research project was to develop a robust model of what it means to age well or successfully with a long-standing disability. As discussed in chapter 4, there is currently a dearth of data related to ageing with a disability, and the studies that do exist tend to focus on medical interventions (Kemp, 2005), or specific factors, such as community participation (Raymond, Grenier, & Hanley, 2014), rather than the experience as a whole. Moreover, previous research by Strawbridge (2002) amongst able-bodied older populations has shown that subjective self-assessments of successful ageing are not necessarily aligned with the objective criteria proposed by Rowe and Kahn (1997). Consequently, there is a growing need for researchers to identify and better understand the factors that both help and hinder those ageing with a long-term disability. Ultimately, understanding how individuals make sense of ageing in the context of disability and age-related changes can give voice to the growing numbers of people who are entering old age with an existing impairment. In order to begin researching this area, it was therefore first necessary to identify individuals who allow the diversity of disability-related experiences to be captured.

Ageing with a disability: post-polio syndrome and spinal cord injury as exemplars

As discussed in chapter 4, the term ‘disability’ covers an extremely diverse range of conditions, impairments, limitations and restrictions. Moreover, the opportunities and experiences afforded to those ageing with a disability are likely to vary depending on a number of factors, including illness complications and even survival chances (Zarb & Oliver, 1994). For instance, Bogart (2014) found that time of onset, but not duration of disability, was significantly related to satisfaction with life, suggesting that
experiencing disability from birth or early in life may lead to better adjustment and satisfaction with life over the longer term. Studies have also shown that younger and middle-aged people with physical disabilities encounter a wide range of obstacles and interpersonal experiences, such as stigma, isolation and lack of opportunity that potentially may negatively affect their physical and psychosocial wellbeing (Ferguson, 2001; Gill, 2001).

In order to capture some of the diversity of disability-related experiences, the first study in this thesis purposefully recruited participants with two very different types of disability trajectory. These were: 1) individuals who contracted polio in childhood and are now experiencing post-polio syndrome, and 2) those who suffered a spinal cord injury before age 40. These two groups represent those who are likely to experience a progressive worsening of physical symptoms (post-polio syndrome) and those who are likely to experience a more rapid decline (spinal cord injuries) due to secondary complications (Kemp, 2005). Further details of these two groups are provided below.

**Post-polio syndrome (PPS)**

Until the latter third of the twentieth century, viral poliomyelitis epidemics occurred regularly throughout the world. The disease varied in its presentation, from flu-like symptoms, to non-paralytic cases with signs of meningitis, to rapid onset paralytic cases typified by inflammation of the brain and spinal cord and a high mortality rate (Nelsen, Layous, Cole, & Lyubomirsky, 2016). Paralytic poliomyelitis, also known as infantile paralysis, was typically spread when contaminated water or other matter entered the mouth (Laffont et al., 2010). Paralytic polio survivors often experienced various degrees of permanent muscle weakness and functional limitations (Laffont et al., 2010).
Although it initially appeared that most infected individuals suffered only mild or temporary symptoms, there remain a large number of individuals, who, having contracted polio during their early childhood in the 1940’s to 1980’s are now experiencing a range of new symptoms. In fact, between 30 to 65% of infected individuals are reported to be experiencing the onset of new complications, after a period of 20 to 40 years of stability. Known as post-polio syndrome (PPS), this progressive condition is characterised as a complex set of neuromuscular symptoms that manifest and impact functionality in many different ways (Amtmann, Bamer, Verrall, Sakem, & Borson, 2013).

Following the introduction of an effective vaccination against poliomyelitis in the mid-1950’s, the amount of research undertaken with this population has been very limited. Although the annual number of new cases being reported worldwide has dramatically reduced (Jung, 2014), the World Health Organisation (WHO) reports that polio survivors represent one of the largest groups with physical disabilities in the world – estimated to be between 10 - 20 million worldwide (WHO, 2010). In Australia it is estimated that there are approximately 400,000 polio survivors, 25% to 40% of whom may go on to experience PPS (Polio Australia, 2018).

Characterised by progressive loss of muscle strength and/or endurance after at least 15 years of stable neurological functioning, PPS can manifest decades after the initial infection and recovery (Trojan & Cashman, 1997). To date, the cause of this disorder remains unclear, but the most widely accepted etiology relates PPS to the degeneration of motor neurons that have become enlarged due to overuse in the post-polio period (Wiechers & Hubbell, 1981). Pain, cold intolerance, a loss of stamina and extreme fatigue are frequently reported effects of PPS and, as the syndrome progresses, individuals experience a high level of musculoskeletal impairments and disabilities that
often impact the performance of daily activities (Balzien, et, al. 2014; Laffont, et al., 2010).

**Spinal Cord Injury (SCI)**

There are currently estimated to be over 15,000 individuals living with a spinal cord injury (SCI) in Australia (SpinalCure Australia, 2015). Research among individuals incurring an SCI in 2007-08 indicated that 20% were diagnosed with complete paraplegia, 27% with incomplete paraplegia, 15% with complete quadriplegia (tetraplegia) and 38% with incomplete quadriplegia (Australian Institute for Health and Welfare: AIHW: Norton, 2010). Internationally, the annual incidence rates for SCI range between 10 and 40 new cases per million people in the population (Wyndaele & Wyndaele, 2006). In Australia, the rate is approximately 14.5 people per million annually (O’Connor, 2005), with approximately 300-400 new cases of spinal cord injury admitted to specialist spinal units nationwide each year (AIHW: Norton, 2010). This equates to more than one injury of this type occurring every day in Australia.

Traumatic injury is the most commonly reported cause of spinal cord injury worldwide (Rosinczuk-Tonderys, Zaluski, Gdesz, & Lisowska, 2012; Sebastià-Alcácer, Alcanyis-Alberola, Giner-Pascual, & Gomez-Pajares, 2014). Incidence of spinal cord injury is observed to have a bimodal distribution, the initial peak generally occurring between ages 15 to 29 (Albert et al., 2005). In Australia, as in other nations, young males are at elevated risk of experiencing traumatic SCIs during this critical life stage (84% in 2007-08) (AIHW: Norton, 2010). Trauma in this population is often related to traffic or sporting accidents, accidents at work, and falls from heights (AIHW: Norton, 2010; Albert, Ravaud, &FTetrafigap group, 2005). The second peak, most often occurs after age 65 as a result of an accidental fall (Pickett, Simpson,
Walker, & Brison, 2003). Non-traumatic SCI, in contrast, is usually reflective of an underlying physiological issue, such as vascular disorder, degenerative spinal conditions, genetic disorders or a cancerous lesion; in these instances, prevalence tends to increase with age (McKinley, Seel, & Hardman, 1999; New, Rawicki, Bailey, 2002). Importantly, it is estimated that the total cost of spinal cord injury in Australia is approximately A$2 billion per year (SCI facts, Spinal Cord Injury Network, 2018).

Despite the limitations and restrictions many individuals with SCI and PPS face, people living with an SCI or PPS can now be expected to live into their 60s and beyond (Yorkston, McMullan, Molton, & Jensen, 2010). For example, people with spinal cord injury (SCI) are now expected to live approximately 85% of a normal life span, and in the past 50 years their survival rate has increased nearly 2000% (Kemp, 2005; Samsa, Patrick, & Feussner, 1993). Given the likely growth in both the numbers of people living with a disability and the diversity of impairments, there is an urgent need for further research into ageing with a disability, in order to develop improved psychological interventions.

**Employing a mixed methods approach to expand the knowledge base**

The studies reported in this thesis used a mixed methods approach, with the aim of expanding our current conception of what it means to age successfully with a disability. Much of the research undertaken to date with those ageing without a disability has been guided by observations of quantitative data; an approach that ultimately tests theory deductively from existing knowledge by testing hypothesised relationships and predicted outcomes. On the other hand, the research into successful ageing with a disability has been qualitative and exploratory in nature, largely using focus group based studies to develop theory inductively (Molton & Yorkston, 2017; Raymond, Grenier, & Hanley 2014). While both types of studies have strengths and
have contributed to the literature and advanced our knowledge to date, both methodologies also bring their own weaknesses. Quantitative research, for example, has been said to ignore the person and does little to explain the “why” of results (Creswell, 2017). On the other hand, qualitative research can be less precise relying on subjective interpretation, and the results of focus groups can be limited not only by small sample sized but also by the willingness of participants to share thoughts or concerns with others in the group, potentially limiting the kind of topics that the researcher can pursue (Carr, 1994). McGrath (1982) discussed the importance of combining methodologies, arguing that each individual research strategy and method also brings its own weaknesses. Moreover, it appears that the epistemological divergence of approaches undertaken to date in successful ageing literature, has led to the untested assumption that the experience of ageing successfully with and without disabilities are rather different. Consequently, a qualitative research methodology, (Study One) was used for the purpose of theory development, while the second quantitative survey (Study Two) tested the predictions derived from the preliminary model to determine if the two results complemented and built upon one another. This approach, known as convergent triangulation (see Figure 2), employs different approaches to achieve a better understanding of a given theory or phenomenon by looking for convergence in substantive findings across the methodologies (Burton & Obel, 2011; McGrath, Martin, & Kulka, 1982; Singleton & Straits, 1999).
Figure 2. Mixed methods, convergent triangulation design

Chapters 6 and 7 detail the research undertaken as Study One. As discussed, Study One employed a qualitative approach as a means to increase our understanding of the subjective perceptions of what it means to age well with a disability and the factors considered important for successful ageing. The views of older adults who contracted polio in their childhood and who are now experiencing post-polio syndrome and those who suffered a spinal cord injury before age 40 were explored. Semi-
structured interviews were conducted and analysed qualitatively, with the aim of capturing people’s individual experiences of ageing with a disability as well as their perceptions of what it means to age well despite an existing impairment. The objective was to use observations, demographic information, and analysis of semi-structured interviews to generate a number of salient themes to be tested in a larger quantitative study.

The findings relating to Study One are discussed in Chapter 7, and the next steps are identified. Chapter 8 then provides an introduction and rationale for to Study Two, while Chapters 9 and 10 detail the methods and quantitative analysis that was subsequently employed to test and build upon the findings of Study One, and provide a discussion of the findings. Finally, Chapter 11 provides an overarching summary of the findings as they relate to theory.
CHAPTER 6: STUDY ONE

This chapter provides a detailed description of Study One’s methodology, including the research design, participants and protection of human participants, materials, measures, procedures, trustworthiness considerations, and limitations. The qualitative study discussed here allowed older individuals ageing with a disability to share what ageing meant to them and their thoughts on the term ‘successful ageing’. The study also explored perceptions of what it meant to age well, as well as the factors that were considered necessary to achieve this objective. Semi-structured one-on-one interviews were conducted with participants, and questions were created based on the earlier literature review. Data consists of themes and patterns that emerged from the interviews following analysis and interpretation.

Design of the Study

Given the paucity of current research on this topic, Study One employed a grounded theoretical approach to bridge the gap between current conceptions of successful ageing and the reality for individuals who are ageing with a long-standing disability. This approach allowed multiple voices to be heard so that a deeper understanding could be garnered. Semi-structured interviews were used to elicit participants’ thoughts, and feelings and to capture the variability and complexity of each individual’s experiences. It was anticipated that this approach would allow for the fullest and most open exchange of views. Furthermore, in order to reduce the risk of artificially restricting, or biasing, the range of topics covered, we used a range of open questions and allowed participants to direct the flow of the conversation within the semi-structured interview framework. The study also aimed to determine if the perceptions and experiences were different for those ageing with a progressive impairment such as PPS, compared with those who experience more rapid declines as...
is often the case for individuals with a long-term SCI. An emic-based inductive research methodology was therefore used to investigate the concept of successful ageing as perceived by individuals ageing with a long-standing disability.

**Participants**

Participants were eligible for inclusion in this study if they were either: 1) aged 50 to 80, and experiencing PPS as a result of contracting the poliomyelitis virus in childhood, or 2) aged 40 to 80 and had acquired an SCI at least 15 years previously, and before age 35. Additionally, participants needed to reside within 200km of Melbourne CBD, have a good level of English, be willing to be interviewed for approximately one hour, and have the capacity to provide informed consent. These two groups, (PPS and SCI), were targeted as they not only provide a broad cross-section of community dwelling adults who had been ageing with a disability but they also represent the two different types of experiences we were hoping to capture. The different age criteria for the two groups reflects that historical survival rates following a SCI were very low, with average life expectancy following a SCI in 1945 being only 2 years (Kemp, 2005). While life expectancy today has improved significantly (Kemp, 2005), long-term SCI populations are still typically younger than those with PPS (Becker, 2006; Foundation for Spinal Cord Injury Prevention Care & Cure, 2009). Participants were screened for eligibility prior to interview appointments being scheduled. As part of this, participants were asked to provide their current age, date of birth, disability, age at onset of the disability and whether they had been diagnosed with a cognitive impairment or intellectual disability. Individuals with a diagnosed cognitive impairment or intellectual disability that could affect their capacity to consent and/or their decision-making ability were excluded from the study. This exclusion was considered necessary due to the nature of the study, which required
participants to have sufficient cognitive capacity to be able to understand and reflect on the questions.

Several methods of recruitment were used. Firstly, older adults who were associated with Independence Australia or AQA Spire in Melbourne were initially invited to participate in the study by means of advertisements and flyers. Independence Australia is a not-for-profit organisation providing a range of support services to individuals with a physical disability. The overall aim of Independence Australia is to support clients maintain their independence and remain actively engaged in society, while AQA Spire provides peer-facilitated supports and resources for people with Spinal Cord Injury to help them tackle issues of life. Spire is also a not-for-profit organisation, that aims to support people to connect, network, contribute, participate and build community around life with SCI. Independence Australia also provides both in-home and respite care as well as supported accommodation. Secondly, the sample size was increased using the snowball sampling technique, whereby participants were asked to refer others who might be interested in participating. These recruitment methods yielded a final sample size of 17.

**Ethical considerations**

The study adhered to the Qualitative Research Review (RATS) Guidelines (Clarke, 2003) as well as the guidelines and policies of the University of Melbourne Human Research Ethics Committee (UMHREC) and the ethical guidelines of the Australian Psychological Association (2007) regarding protection of human participants. Approval was received from UMHREC prior to recruitment. A copy of the Ethics Approval Letter is included as Appendix A. Appropriate steps were taken to minimize any potential harm to the participants. To protect confidentiality of participants, all identifying information was stored in a separate file and in general
only pseudonyms were used throughout the data. The only exception to this rule was if participants specifically requested that their correct name be used. All participants read and reviewed the Plain Language Statement (see Appendix C) and the Consent Form (see Appendix D), prior to the interview commencing. The researcher discussed the design, purpose of the study, and any potential negative consequences that could arise as a result of participation in the study. Participants were informed that participation was voluntary and that they could withdraw their consent without penalty at any time. Participants signed the Consent Form to confirm that they were aware of these purpose, nature and requirements of the study prior to the interview commencing. Immediately following the interview, the researcher also debriefed participants. In addition, the researcher provided a list of referrals to mental health agencies. The researcher also advised the principle supervisor in instances where participants had become upset during the interview.

Measures

In an effort to allow the voices of older adults who are ageing with a disability to be heard, and to understand the factors they consider important for ageing successfully, the study used in-depth interviews to gather qualitative data. An interview guide was used that enabled the collection of data about older adults’ experiences of ageing with a disability, as well as their broader outlook on ageing well or successfully. The guide consisted of seven main open-ended questions, (see Appendix E) designed to address topics and questions from multiple approaches so as to elicit as much pertinent information as possible. There were eight additional sub-questions that were designed to allow further exploration of the initial answers. Questions were first developed by the research team based on prior research, and the student researcher’s clinical experience working with individuals with physical disabilities. These were then
reviewed and refined by specialist advisors at Independence Australia and AQA Spire to ensure that wording was appropriate. The interview schedule included questions about how well/successfully the participant felt they had aged so far; what personal strengths they thought had helped them as they had aged and what obstacles, if any, had hindered their ability to age successfully. Broad questions allowed for participants' thoughts and feelings to emerge. The interview reflected participants' views on areas of their life, such as family, relationships, work, and economic experiences, as well as physical and mental health.

While the general interview questions were posed by the researcher, the answers received depended on the participants and reflect their views and their words. This research design was exploratory, and as such, the structure evolved as the data emerged, and analysis of the interviews was conducted. For example, although questions in the semi-structured interview guide remained consistent, follow up questions to elicit fuller responses or to gather context were adjusted based on answers obtained from individual participants. Thus, as the interview was administered to participants it was flexible enough to respond to participants and their presented answers.

**Researcher’s position**

Given the nature of qualitative research, the researcher was mindful of being an interactive instrument of data collection. It is important therefore to understand how the researcher’s life experiences and identity have an influenced the nature of the data collected and its analysis (Pezalla, Pettigrew, & Miller-Day, 2012). In this study of ageing with a disability, it is important to note that the PhD candidate does not have a disability, and is not yet close to reaching old age. The researcher may therefore be
considered an ‘outsider’ as they do not share the experiences of ageing with a disability with participants (Dwyer & Buckle, 2009).

**Pilot testing**

Turner (2010) recommends that prior to roll-out, researchers should conduct a pilot test of the instrument to identify any limitations or weaknesses within the interview. Although a formal pilot study was not conducted in this instance, suitably qualified individuals at Independence Australia and AQA Spire reviewed all the study materials including the Plain Language Statement, Consent Form and Interview Guide prior to administration. This process enabled the researcher to verify and refine the interview instrument before conducting the study to confirm that it was not too lengthy. The goal was also to ensure that questions were worded appropriately and that the language used was understandable and relevant.

**Procedure**

Once approval was received from the University of Melbourne Human Research Ethics Committee recruitment commenced (see Appendix A). Recruitment was conducted from January 2016 to May 2016. Individuals with PPS or an SCI were invited to participate in the study via articles and advertisements in Independence Australia’s client magazine. An advert detailing the study was initially placed on Independence Australia’s Facebook page and also subsequently included in the March edition of their *Independence Matters* client magazine (see Appendix B). Concurrent to this, ethics amendments (HREC Number 1545557.2 and 1545557.3) were also submitted and approved. These amendments allowed the study to extend the upper age range of participants to 80 and the lower range for SCI participants to 40. These amendments were deemed necessary to allow for the capture of participants who had
acquired the poliomyelitis virus during the major Australian epidemics in the 1940’s and 1950’s and also to ensure that a representative cross section of adults with a long-standing SCI (15 years or more) were able to participate in the study. For example, advice from a number of individuals with a long-term a spinal cord injury, suggested that for them, it is the duration of disability that is more important rather than their chronological age, in terms of adaption and ageing well. The majority of spinal cord injuries are incurred in the 15 to 24 years age range, thus by lowering the age range we were also better able to represent those participants who acquired a disability as part of this group. The ethics amendment (1545557.2) also broadened the reach of the study to include AQA Spire, as another potential recruitment source. Following approval of the amendments the study was also promoted on Spire’s Facebook page and in their quarterly newsletter. Additional participants were also recruited using snowballing methods and word of mouth.

As potential participants notified the researcher of their interest, they were contacted by email or telephone to briefly convey the nature of the study. The potential participant was given basic information about the research and the rationale for the study. Potential participants were also informed of possible risks and the option to decline participation in the study at any time without penalty. The individual was also notified of the nature and requirements of the study as well as the steps to be taken to protect confidentiality. Prior to participation in the study, participants were asked to answer three brief screening questions confirming their current age, disability and whether they had ever been diagnosed with a cognitive impairment so as to confirm their eligibility to participate. Participants were asked when they acquired polio of their spinal cord injury. These questions enabled the researcher to determine that potential participants met the inclusion criteria.
Individuals who met the eligibility criteria were considered suitable to participate in the study. Those who agreed to participate and met the inclusion criteria were provided with a copy of the Plain Language Statement (see Appendix C) and Consent form (See Appendix D) via email prior to the interview being scheduled. These documents also provided contact information included names, telephone numbers and email addresses of the researcher and the principal and co-researcher. The participant and researcher then agreed on a meeting date, time, and place for the interview. Interviews were conducted in a private room in the participants’ homes, a private space at a public library or at the participant’s office.

Upon meeting, the researcher again reiterated the nature and purpose of the study and provided another copy of the Plain Language Statement (see Appendix C) and Consent Form (see Appendix D). Participants were asked to sign to Consent Form to confirm their understanding. The Consent form also included permission to audio-record the interview for later transcription. Where possible the researcher used two digital audio recorders for the interviews, ensuring that the recordings are accurate and complete. However on a number of occasions the use of only one device was possible.

Each individual was again asked demographic information at the start of the interview to provide the researcher with background information. Participant were also given a pseudonym (except where participants had requested that their own name be used) to ensure confidentiality and this name is on each recording, transcript, and notes used for the participant. Each participant was then asked to respond to questions given audibly by the researcher in a semi-structured interview (see Appendix E). Interviews ranged in length between 48 minutes and 270 minutes in length ($M = 102.70$ minutes, $SD = 55.35$ minutes). Semi-structured interviews were conducted with participants to increase understanding of ageing and adjustment experiences and help identify factors
that individuals who are ageing with a disability identify as stressors and obstacles to ageing successfully. The interview was semi-structured to ensure that the topics of interest were covered with each participant in the same way. Each participant was asked the set of predetermined, open-ended questions, and the interviewer used verbal probes to explore issues and invite participants to elaborate further. To reduce bias, and to encourage participants to be frank and honest, questions were presented in a neutral language, for example one question asked: ‘Do you think ageing well is the same as successful ageing? Can you explain your answer?’ Additionally, the interviewer validated the expertise of the participants, and that the study team were interested in their experience.

Following the interview, the researcher provided a debriefing to address any psychological distress that may have been experienced during the interview. As part of this, participants were also given information and contact details for appropriate mental health support should they subsequently feel that they needed it (See Appendix F). As expected, however, there were minimal adverse psychological effects for the individuals in the study. Importantly two participants did become distressed when recalling earlier memories, and in both instances the researcher offered to suspend the interview and although both declined, these occurrences were also reported to the principal researcher.

As each interview was completed the researcher also noted thoughts and feelings experienced during the interview in a research journal, as well as any observations and important points. All transcripts and audio recordings are securely held on an encrypted UBS which is secured in a locked cupboard. Following the publication of publications arising out of the thesis, all transcripts and audio recordings will be destroyed after the officially authorized period of seven years.
Provisions of Trustworthiness

Trustworthiness of the study was ensured by an audit trail of the research. This includes notes, observations, transcribed interviews, audio recordings, research documents, and documentation of the data analysis, as well as the researcher's journal with observations, realisations, ideas, and findings. The researcher's dissertation committee, chairperson, and supervisors were consulted throughout the process to maintain credibility and to avoid biased research and data.

Data Analysis

After each interview, the researcher transcribed the audio-recorded sessions verbatim for analysis. The researcher repeatedly listened and cross-checked the transcripts to the audio recordings for reliability and accuracy. The transcripts were also cross-referenced with the researcher’s observations to capture additional information noted during the interview, such as hand gestures or an amused expression when asked a question.

Qualitative analysis software, NVivo 11, was used to store the data (QSR International Pty, Ltd, 2018) and improve data management (Patton, 2002). For example, Nvivo 11 assisted the researcher to organise information – making the identification of themes, categories, and patterns more efficient – and facilitating improved understanding of the experience of ageing with a long-term disability (Patton, 2002).

Thematic inductive analysis was used to develop a preliminary model of what it means to age successfully with a long-term disability. Thematic inductive analysis provides a flexible and rich account of data. Importantly it allows for the exploration of data beyond frequency counts, and facilitates the identification of semantic themes and
patterns of responses across the dataset based on the interviewees’ interpretations and meanings ascribed to their experiences (Braun & Clarke, 2006). Thus key themes were identified based on how relevant they were to the research question and/or their significance as a patterned response within the data. Importantly a theme was not determined based solely on how frequently it occurred, but also on how well it captured important information relating to the overall research question.

As stated in Braun and Clarke (2006, pp. 87-93), there are six phases to conducting a thematic analysis as set out in Table 1 below. In order to ensure rigor and reduce the likelihood of introducing bias or judgments into the development of themes, the researcher followed the six steps as closely as possible. The data were coded using a grounded theory approach (inductive).

Table 1. *Braun and Clarke’s* (2006) 6-stage process of analysing qualitative data.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Actions and Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Familiarise yourself with your data</td>
<td>Transcribe recordings, read and re-read data with research questions in mind, generate initial list of what found</td>
</tr>
<tr>
<td>Phase 2: Generate initial codes</td>
<td>Codes generated inductively from observations in the data or deductively from theory</td>
</tr>
<tr>
<td>Phase 3: Search for themes</td>
<td>Sort codes into themes – based on the frequency with which a concept occurs and/or the extent to which it related to the research question</td>
</tr>
<tr>
<td>Phase 4: Review themes</td>
<td>Confirm that data within themes cohere meaningfully and individual themes remain distinct and identifiable</td>
</tr>
<tr>
<td>Phase 5: Define and name themes</td>
<td>Identify the ‘essence’ of each theme as well as determining what aspect of the data each theme captures</td>
</tr>
<tr>
<td>Phase 6: Produce the report</td>
<td>Final analysis and write up, selection of vivid, compelling extracts to illustrate themes.</td>
</tr>
</tbody>
</table>
Becoming familiar with the data involved, first, transcribing the audio-recorded interviews, verbatim. The process of transcribing enabled the researcher to attune to similar statements made by different participants, for example: “successful ageing, well, doing all that you can, for as long as you can” (Female participant with post-polio syndrome, age 72), was a sentiment expressed, albeit in different words, by all participants across the data set. Following the transcription of each interview, the researcher read each transcript back while simultaneously listening to the audio to ensure accuracy. Once all interviews were transcribed and verified for accuracy, the transcripts were all re-read twice before coding began. The first read provided an overview of the content of the interview and enabled the researcher to understand the context in which statements were made. The second reading allowed for initial threads and ideas to emerge, and note taking of observations and patterns commenced. As part of this, key phrases, words and profound statements, which together captured the main ideas of the participants’ responses were highlighted, “success for me is to be still living in my own home maybe 10 or 15 years from now”. Once phrases and words were identified and highlighted, the process of generating initial codes began.

Phase two involved initial coding. The researcher coded each interview systematically, specifically looking at the context and meaning of phrases and words. Sections of each transcript were coded and allocated to categories (or nodes) using NVivo 11. A category was created to capture each of the main ideas expressed by the participants. Importantly, data from each group (PPS and SCI) were initially analysed separately to ensure that any differences were captured (see Table 2). In another example, the researcher observed a pattern spanning the transcripts, whereby participants discussed their determination to make the most of their abilities and not let their disability prevent them from engaging in things: “you’ve just got to do your best whatever you do” (Female participant with post-polio syndrome, age 78). Phrases and
related ideas such as these were then coded into meaningful categories using either the exact phrase or a portion of it. Participant responses in relation to question one of the interview for example generated 143 codes from the PPS group. These codes were then placed into 13 initial categories. The SCI group by way of comparison generated 97 codes which were subsequently used to create 18 initial categories.

Table 2. An example of data-driven codes (in non-italics) with sample quotes from both PPS and SCI groups (in italics)

<table>
<thead>
<tr>
<th>Name</th>
<th>Disability and ageing require ongoing adaption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation</td>
<td>Participants noted the need to adapt expectations, work within limitations and use compensation strategies as they age and physical abilities reduce</td>
</tr>
</tbody>
</table>
| Ideas of interest | • How do individuals manage disability and ageing simultaneously?  
• Do they use SOC strategies as they age? If so, how?  
• How do others/ systems impact on this? |
| PPS | Managing expectations  
“these are the things people with a disability have got to start to think about as they get older, that they may have to go back to wearing something like that. So you’ve got to accept it” (F/PPS/70).  
“I’ve got about 6 hours, active hours. And that’s the thing – is recognising that I’ve got those 6 hours and to do what I can” (F/PPS/72).  
Acceptance of self and abilities  
“I’m grateful to have achieved a sense of balance and wisdom and liking for myself, which took a long time given my stature and disabilities” (F/PPS/72)  
SOC strategies  
“I have got to come downstairs backwards…I realised I can’t support myself... That step where you have to support yourself on one leg on the upper step, and put the next one down, there is no leg there...It’s a nuisance, but I don’t let it stop me” (M/PPS/76)  
“I’ve only got a little camera now, because when I was in London I had a big Canon, and it became too heavy” (F/PPS/72)  
“ages ago you know you would do it all in one day. Well I mean I did washing yesterday, but it was this morning I folded it up and put it away. Because it’s too much and I don’t put myself out there to do too much. By having a strategy to do it, it works much better. I can cope with it, and I feel better about it...” (F/PPS/78).  
How others help/hinder ageing with a disability  
“It’s very hard when you age to get the help. It’s very, very hard!” (F/PPS/60) |

(F/PPS/60)
AGEING SUCCESSFULLY WITH A LONG-TERM DISABILITY

SCI

Managing expectations

“you’re always worrying about something, it’s never, never ideal, never 100% fit... you just take the challenges as they come and overcome them and move on” (M/SCI/52)

Acceptance of self and abilities

“it is not how much I’ve done or what I’ve done, you know it is the fact that you are still alive” (M/SCI/50)

SOC Strategies

“I’ve just got to slow down” (M/SCI/52)

“just being sensible, a lot of people kind of keep trying to do things, overdo things and get into even more trouble with worn out joints and what have you” (M/SCI/52)

“you learn to make things easy for yourself by the choices you make” (M/SCI/52)

“when it gets to a stage where you know that get’s worse, you know, I’m thinking of what options, like driving for example, getting in and out of bed, how am I going to do it? Erm, I might have to start relying on slide boards, start using slide board or something yeah, so that’s sort of forward planning I guess” (M/SCI/46)

How others help/hinder ageing with a disability

“I went to the council and it took years, I fought until I got it, and even I had to put in a complaint to the Equal Opportunity Commission” (F/SCI/40)

Key: F = female, M = male; SCI = participant with SCI, PPS = participant with PPS; # = participant age

The third phase of analysis involved searching for themes, and this was the point at which the researcher began to analyse the codes to consider the extent to which they related to the research question and/or their prominence as a patterned response within the data. Consideration was also given as to how responses would fit into an overarching theme. Each research question generated a different number of categories, although, given the nature of the questions and the study itself, many of them overlapped. For the PPS group there were 44 initial categories for the overarching question of what is required to age successfully with a long-term disability. In comparison the SCI group yielded 45 initial categories. Categories from each group
were subsequently compared and, as they were found to be broadly comparable, were combined, although similarities and differences of expression between groups were captured and retained. As the focus the shifted towards analysing the categories, clear themes also began to emerge. A preliminary set of potential themes was created based on their salience and prominence within the data set. Additionally, visual thematic maps were used (see Figure 4 for an example), in order to assist in organising the categories into themes.

The fourth phase as outlined by Braun and Clarke (2006) involved refining and reviewing the preliminary set of themes to determine which could be merged or subsumed into broader, overarching themes. As part of this process, it was important to ensure that the themes were distinctive from each other and that meaningful data were not lost. Thus, ideas and evidence were iteratively and constantly compared to produce themes and ensure that the interpretation was correct. Importantly the transcripts were all re-read for a third time, during this phase, this ensured the themes continued to work across the entire data set. Condensing the preliminary themes into a more robust and cohesive set also helped to refine the thematic maps further. Throughout this process, evidence for the utility of themes was supported by quotes from the interview transcripts.

Although presented as a linear, step-by-step procedure, the research analysis was in reality, an iterative and reflexive process. This ongoing interactivity, applied as part of the qualitative process, is described by Tobin and Begley (2004) as the overarching principle of ‘goodness’. Meanings of words and data were examined by the constant comparative method, in which themes emerged from the data as they were analysed (Maykut & Morehouse, 1994). This involved the researcher listening to interviews and
Figure 3: Example of the thematic map for the physical health theme
re-reading field notes to identify important moments, and encoding them prior to interpretation (Boyatzis, 1998). Quotes from each code, or combination of codes, were compiled and then reviewed by academic supervisors for discussion and interpretation. At each stage of the coding process the results were reviewed by the research team for coherence, consistency and to minimize bias. Saturation of themes (i.e., the point at which no new patterns or themes emerge) was achieved after six participants in each group, which is in line with the 5-15 participant range identified by Kvale (1996). Following the final generation of the themes, the results were also shared with a subset of participants who agreed that the themes identified were accurate and appropriate.

**Results**

Findings are presented in five sections. First demographic information is provided. The second section addresses participants’ perceptions and experience of what it is like to age with a disability. Section three explores their views regarding the term ‘successful ageing’. The fourth section explores the emergent themes in detail, and the final section presents a proposed model of successful ageing based on the data and themes that emerged from the interview data.

**Characteristics of the sample**

The sample consisted of 17 older adults (eight male and nine female) aged 40 to 78 years (Mean Age = 62.12, SD = 12.11). For the purpose of this study participants were recruited with two different types of disability, there were nine participants with post-polio syndrome (PPS), all of who acquired the poliomyelitis virus in childhood (one male and eight female, Mean Age = 70.11, SD = 5.62, range = 60-78) (participants with PPS) and eight participants with a spinal cord injury (participants with a SCI). The participants with an SCI had all acquired a diagnosed spinal cord injury 15 or more years
ago and were aged 40 or above at the time of the interview (seven male and one female, 
*Mean Age* = 53.13, *SD* = 11.17, range = 40-76). Of the participants with a SCI, four 
participants were diagnosed with paraplegia and four were diagnosed with quadriplegia. 
Participants with PPS were significantly older (*t* (15)=4.03, *p*<.05), and included more 
females (*X*²(1, *N*=17)=9.96, *p*<.05) than those with a SCI. Study participants included a 
journalist, a lawyer, an academic, an engineer, a competitive sportsperson, a medical 
professional, a tradesperson, a farmer and a social worker. Interviews ranged between 48 
and 270 minutes in length (*M* = 102.70, *SD* = 55.35 minutes).

**Perceptions and experience of what it is like to age with a disability**

Participants were initially asked “what does ageing mean to you?”, as a means of 
opening the discussion and capturing their views and attitudes towards ageing in 
general. Many participant’s initial response suggested that they never really thought 
much about ageing, while acknowledging it as a natural process and one that most 
people will go through eventually:

“…if we live long enough, it’s, you know, we’ll go through it” (F/PPS/65).

Overall participants’ responses generated 11 categories with respect to what 
ageing meant to them, reflecting a mix of both positive and negative aspects of ageing. 
Positive aspects of ageing included achieving an acceptance of self over time, having 
time for reflection and perspective taking and acknowledging a sense of pride in 
achievements. Additionally participants reported that having a reduced time horizon 
created a desire to make the most of abilities and time available. In contrast, many 
participants also acknowledged that ageing with a disability is hard and often frustrating.
One male SCI participant explaining it as follows:

“the older you get, the harder things get physically...
...there are progressively more problems than there were in the past. So that things used to be episodic, I’d have something and then I would have a year or two of no problems, and then I’d have another thing. Now things tend to be fairly continuous, there’s always one thing or three things happening at once that I have to manage and keep track of, in terms of health” (M/SCI/62).

Indeed, the overwhelming majority of participants (82%) reflected that, for them, ageing with a long-term disability had typically meant ongoing and proactive use of strategies to adapt and cope with accumulating physical difficulties and secondary medical complications:

“you just take the challenges as they come and overcome them and move on” (M/SCI/52).

“I’ve got about 6 hours, active hours. And that’s the thing – is recognising that I’ve got those 6 hours and to do what I can” (F/PPS/72).

“...you’ve got to do things in a slightly different way. Erm, things like going shopping and that, because like me in the wheelchair, you can’t reach a lot of the shelves in the supermarket. But I have made arrangements to have somebody help me at the supermarket, to do that, push the trolley and to do things like that. But you have got to also not be frightened to ask for these sort of things. It was different when I was walking, that I could perhaps do a little bit more than that, but you have to adjust. I think you have to adjust” (F/PPS/70).

In fact, many participants exhibited high levels of determination to remain as active and involved as possible, as one female participant with PPS stated: “you make the best of what you’ve got” (F/PPS/76). Another participant discussed her motivation in terms of her desire to avoid becoming depressed and becoming socially isolated:

“I’ve got to keep coming up with different ways to overcome it [disability and fatigue], rather than getting depressed. That’s the last thing that I want. I’ve got a life to live while I’m here...” (F/PPS/78).

For the majority of participants in this study though, one of their greatest concerns about ageing was the potential loss of independence. For some participants, the fear
surrounded the potential deterioration of physical abilities, and the resultant need for additional care:

“I’ve always been a [paraplegic] and fiercely independent… If I lost that I’d just, you’d just want to give up. I can’t have people look after me, I just can’t have it. Because that’s just not me!” (M/SCI/52).

“I don’t want to have to rely on somebody to assist me physically. I think that’s the major thing… I want to be able to continue to do as many of the things that I possibly can, for as long as I can” (F/PPS/66).

Whereas for others, the concerns related to the possible loss of autonomy in the future either through ill-health, (specifically a stroke or dementia), or due to financial strain. One male participant with a SCI summed it up as follows:

“I just don’t want to get to an age where my decision-making is taken away from me you know, that’s the only thing I’m scared of. As long as I can have, you know, my decision-making capability, I don’t mind how old I am....

...I’m already disabled you know and I don’t care, I have learned to cope with that, so any more pain and suffering I don’t care, I can answer that you know, so I don’t have to worry about suffering or being in pain, but I do worry about losing my decision-making and independence...

...if I can retain my mental faculties and my independence and I think that, it sounds like a very funny thing because I might not look like I have much independence because I’m a quadriplegic. I am scared I will lose that and it will be taken away from me either through loss of my mental faculties or from a financial situation” (M/SCI/50).

Many of the PPS participants had already noticed, and expressed some frustration at the decline in their perceived ability to remember information - a symptom often associated with a diagnosis of post-polio syndrome - however most had not only reconciled this, they had also developed strategies to cope:

“...what annoys me now... is polio effects the brainstem, you get terribly tired. I lose words and I can’t add up...I used to win spelling bees, and I got a honours in maths. And the fact it that I can look at something, and even, even something like a page and there are days I’ll read all of that, and think I didn’t understand a word of that. I’ll have to put it aside and read it again, and I have to do that three or four times. Now I was an accounting machine
operator. I was good at these things. That’s annoying, but so what you live with it” (F/PPS/76).

“...you lose your memory, after lunch. You get tired...so you plan your whole day” (M/PPS/72).

Interestingly, many of the participants when asked what ageing meant to them, recounted their experiences of seeing significant others age, rather than themselves – for some participants this was a source of inspiration:

“I watched my mum closely as she was getting older and she was an incredibly active person” (M/SCI/62).

For others though, this recollection was seen as potentially a cautionary sign of things to come:

“having watched my mother go through it, who ended up with slight dementia in the end, you sort of understand that little bit more about what ageing might happen” (F/PPS/70).

Reflections on the term successful ageing

Participants reported mixed views regarding the term ‘successful ageing’. Despite all participants reporting that ageing with a disability was, at times, difficult (as discussed in the previous section) they all stated that they felt that they were ageing successfully. They did, however, express less positive views about the term itself. The majority of participants (66%) viewed the term as idealistic rather than practical, emphasising the importance of luck, socioeconomic factors and good genes in terms of determining an individual’s eventual outcome.

“Successful ageing would be put down to not abusing your body, but there’s people who have done the right thing all the time and they’re dead at 30” (M/PPS/72).

“I don’t think that there’s any way to be successful ageing. You age. That happens no matter what. And where is the success coming in? Pure luck! You do the right thing or you don’t do the right thing. You are born with parents that have got the terrific genes or they don’t have the terrific genes” (F/PPS/76).
“I think successful ageing, ageing involves financial, your economic situation, your financial situation. So in some, in some, in some ways, is an elite in some ways” (F/SCI/40).

Participants also expressed concerns about the implicit judgement the term conveys in terms of perpetuating the marginalisation of individuals with disability.

“...success has a, has an implication of failure as well, so you’re a winner or a loser...” (M/SCI/62).

“I think successful is very subjective thing. It’s somebody else’s judgement of what you’re doing successfully and what you’re not. I mean, you know, for all I know there are people who might say I shouldn’t be here, you know, I shouldn’t be living here, I should be somewhere else I can be looked after. And they would see that as a successful outcome. Whereas I would see that as an absolute disaster” (F/PPS/66).

Participants with post-polio syndrome, in particular, viewed the term with some scepticism, referring to it variously as “bureaucratic weasel words” (F/PPS/65), as “just a statement made by people who are not old” (M/PPS/72), or, in one case, as an “oxymoron” (F/PPS/76). Just over one third of participants (35%) also raised concerns that people could be disenfranchised by the term, instead preferring the term ‘ageing well’ (female with post-polio, age 78) as they felt that this was a closer representation of an individual’s experience rather than a reflection of someone else’s appraisal.

Despite participants’ reservations about the term, a consistent theme that emerged from the present study was that participants viewed successful ageing as being able to maintain a balance across multiple domains of life.

“... the absence or health or, or ill-health is not necessarily a determinant of unsuccessful ageing because you can be sick and still ageing well. And you can be poor and still ageing well” (M/SCI/50).

“... successful ageing is probably like managing your ageing, like just being aware of how things work. As in, you know you’re going to slow down, you know you’re going to get older, you’re going to be weaker, and it’s sort of managing those things along the way. And also, trying to put things in place when you need it, they are going to be there” (M/SCI/45).
“... they’re doing the best they can with what they’ve got. That’s what ageing well is. And with minimal help from outsiders. You’ve aged well, you’ve had long years and you’ve done a lot in your lifetime” (F/PPS/76).

“... being able to accept that there will be change. Erm, but also just being, if you can be content and accept that things will be different, erm, and you might rant and rave and rail against it at times, but if you can come to the, you know, decision that this is probably going to be the best way you can do it for now, and just keep doing what you’re doing for as long as you can.” (F/PPS/66).

“... everyone is going to age and everyone, or pretty much everyone, are going to have problems, and then it’s a state of mind or an attitude as to how successful you are” (M/SCI/62).

Dimensions considered important for successful ageing with a disability

In total eight themes each describing one interacting dimension of successful ageing were identified as important to ageing successful with a disability. These dimensions have been labelled as follows:

1. Looking after physical health
2. Retaining cognitive abilities
3. Positive psychological resources
4. Retaining a sense of independence and autonomy
5. Social engagement and participation in community
6. Retaining a sense of purpose
7. Fairness, respect and recognition
8. Safety and security

In addition a number of subthemes were also identified and more detail is provided under each section below.

**Theme 1: Looking after physical health**

Looking after physical health was an important theme for disabled participants who perceive themselves to be ageing successfully. In total six subthemes emerged
under this theme: 1) freedom from disability is not necessary for successful ageing; 2) to age successfully with a disability you need to proactively look after your health; 3) it is important to work smarter and within your limits so as to avoid potential problems; 4) you need to learn to manage pain effectively; 5) good genes always help; and 6) you need a good medical team to support your efforts.

Perhaps not surprisingly, the physical domain for those with a long-term disability related less to the absence of disease or disability, and more to protecting abilities and adapting and working within physical limits as they alter and change over time.

“I don’t fear infirmity, or this, or illness or death, or anything or because I think I’m already disabled you know and I don’t care I have learned to cope with that” (M/SCI/50).  

Noting the importance of needing to protect their remaining abilities for as long as possible, a 46-year-old male with quadriplegia commented:

“…what they [individuals with an SCI] have got left, means a lot more to them” (M/SCI/45).  

Indeed, despite participants experiencing various degrees of physical impairment including paraplegia and quadriplegia, remaining as active and mobile as possible, while working within physical limitations, remained an important driver of behaviour for many of the participants.

“I’m really protective now of my legs and I want to make sure that I can be as mobile as possible” (F/PPS/72).

“... if I do things in stages I don’t suffer as much” (F/PPS/78).

For all participants, recognition that they wished to be able to continue to undertake meaningful activities into the future, provided the impetus to proactively manage their diet and exercise to reduce the risk of secondary illnesses such as pressure sores, cardiovascular disease and Type II diabetes. For those ageing with an SCI for
example, much of the discussion focused on the need to maintain a healthy diet and active lifestyle to ensure healthy bowel function and skin integrity, and to avoid putting on weight. For participants with PPS, where muscle weakness and fatigue are more significant issues, the focus was on maintaining optimal energy levels, reducing diabetes risk and also weight management. Despite these efforts, however, 33% of participants with PPS interviewed for this study already had a diagnosis of Type II diabetes.

“... your health is your wealth” (M/SCI/52).

“... twenty years in a chair, I know what to eat. I know not to overindulge in stuff” (M/SCI/52).

“... living successfully is about feeding yourself successfully” (F/PPS/72).

“... exercise is really important...” (F/PPS/72).

Additionally, both groups identified the need for good medical and allied health support to enable people with disabilities age successfully. Participants unanimously spoke of the need for advice and assistance, from health care professionals who are aware of the issues, are empathetic, knowledgeable, and who have the appropriate equipment and training to be able to provide sensitive and practical solutions. Participants with an SCI who received support from specialist spinal cord rehabilitation teams following their injury, plus yearly check-ups, acknowledged the difference this had made for them:

“... the spinal unit did teach me good, as I said good techniques for you know, keeping my health, my skin and etcetera” (M/SCI/49).

“... you see the doctor, the physio all that sort of stuff...the purpose of that is to catch stuff before it happens” (M/SCI/45).

However a number of participants (principally those ageing with PPS), also spoke of the need for professionals to be prepared to learn from those with the direct experience. One participant with an SCI who also observed the same, and who was also in the rather unique position of having been a medical doctor, training as a surgical
registrar in a specialist spinal cord unit at the time of his accident, expressed frustration and concerns that none of his medical team had ever asked about his experiences and learnings:

“all the successful quadriplegics, they come out and unlearn everything that has been taught to them, because all of those techniques have been developed by nurses and doctors who haven’t been quadriplegics themselves...

I really worry about this, that I will die with this, waste of this knowledge...

...but nobody actually asked me about clinical management because they think that I’m patient now, but I’m a patient who is good at clinical management” (M/SCI/50).

Participants with PPS similarly expressed a great deal of frustration about the lack of knowledge about their condition amongst modern medical and allied health professionals, as one polio survivor put it, “End Polio Now has made us even more invisible” (F/PPS/72). Indeed, participants with PPS universally reported having to regularly educate professionals about their condition and the limitations they face and all expressed a desire for “good advice from people who know what your problem is” (M/PPS/72).

**Theme 2: Retaining cognitive abilities**

A central component to successful ageing that was identified by participants in both groups was the importance of remaining cognitively healthy and aware. As one 50-year-old male participant with quadriplegia stated: “the mind is the key to everything, you know”. For many participants, retaining their cognitive abilities equated to retaining their sense of self and identity;

“... if you’re not in a home, if your brain is functioning properly, that’s ageing well” (F/PPS/60).

In relation to this, every participant described hoping to avoid dementia or a stroke that could impact their cognitive capacity and ability to live independently, “My mind is
the only thing I have now, but I can use it to run my life” (M/SCI/50). Other participants discussed how their ability to learn new skills enhanced their self-esteem:

“... you learn to do things on your own, your own way, and you feel good about it” (M/SCI/52).

Others discussed using the importance of retaining cognitive abilities to boost mood and as a means of assisting an individual capture the sense of ageing well:

“...using my, when I have the chance, my skills and organising skills to, to, achieve or to make things happen that I would like to happen that make me feel good” (M/SCI/62).

The majority of participants also reported actively trying to exercise and stretch their minds using cognitive exercises, such as crosswords, reading, or exploring new fields of interest in the hope of staving off dementia for as long as possible:

“I try and learn something new every day. I have always done that to keep the brain active” (M/PPS/72).

Participants also described how their cognitive abilities help them to age well by managing physical difficulties, reduce physical stress, and maximise the opportunities available to them;

“...ageing well is getting clever in your old age. Doing things the easy way... that’s how I get through life. I sit and plan” (M/PPS/72).

“I am reasonably intelligent that helps I suppose, you know I can work out most things if I have to” (M/SCI/62).

“...try and do the best with what you have got now and also think about, I don’t know what you might need down the track”. (M/SCI/45).

“...having a rich life, in those hours of the day that, that, erm you’re able to operate. A rich life, it’s you know we owe it to ourselves and our family. To, to have a rich, we owe it to society to have a rich life” (F/PPS/78).

Other participants discussed how cognitive abilities were important for ageing successfully as they helped them to plan ahead and evaluate situations to reduce risk and possible threats to self, or to make the most of their reduced energy:
“Realising your limitations is the major thing. If you know what you are able to do and work within it, and don’t try and go out of the boundaries, because you pay for it… so you are thinking all the time and trying to mitigate anything that is going to have an adverse effect on you” (F/PPS/78).

Theme 3: Positive psychological resources

Three significant subthemes relating to maintaining positive psychological resources emerged as necessary to achieve a sense of ageing successfully with a disability, including: 1) retaining a positive attitude and affect; 2) the importance of personality traits such as patience, tenacity, resilience, as well as; 3) using positive coping strategies to bounce back from setbacks, and to enable you to continue to do what you want to do.

Positive attitude and affect.

This subtheme related to the importance of positive psychological resources including maintaining a positive outlook and sense of self-worth.

“You don’t cave in at adversity. You don’t cave in when things don’t go your way” (F/PPS/76).

“…that is ageing positively again, you are thinking positively about yourself and not just being disabled” (F/PPS/78).

“…if you are negative, it is obviously going to be a lot harder” (M/SCI/62).

“…not dwelling on things, I think that probably helps quite a lot as well” (M/SCI/45)

“…you learn to do things on your own, your own way, and you feel good about it” (M/SCI/52)

“…when I look at other people with problems, I’m grateful, there are a whole heap of things that you could have that are worse” (F/PPS/72).

“from where I was before I had my accident, I would never ever go back to that life. I know so much now that makes me so much happier and so much better. And live life so much better. I don’t know if I would successfully have aged this much if I was, I’m pretty sure, I don’t know I’m pretty sure I wouldn’t have” (M/SCI/50).
The importance of personality traits such as patience, tenacity, resilience.

A number of participants spoke about the importance of proving themselves to be as good or capable as others, demonstrating in doing so, the important role personality has played in their own successful ageing process:

“...no matter what was thrown at me, I just said “oh I can do that, I will do that”” (M/SCI/52).

“...we’re not totally defined by our polio, but we are motivated by it...we’re triple A personalities really.” (F/PPS/72).

“...I just had to prove to myself that I was as good as anybody else” (F/PPS/78).

In recounting the development of these qualities many participants also spoke about the important role that their family played in motivating and inspiring them, as one 66-year-old female participant with PPS recalled:

“I was never told by anyone in my family that you can’t do that, you’re not going to be able to do that. I was always told if you want to have a go that’s fine.”

Certainly, all participants emphasised the importance of tenacity, patience and remaining optimistic despite the hardships they might encounter, participants summarised their approaches and thoughts as follows:

“...ageing well is doing as best as you can to, to how you are and what you are, with whatever you have” (F/60/PPS).

“this is really important in ageing well, erm, is, is not letting your brain take you off into downward spirals. Erm, that is so easy to listen to it instead of saying, no, I’m not going down that path” (F/PPS/72).

“...as we get older, what we are mentally is what really matters” (M/SCI/50).

“...I mean life is a journey, and I think that some people never do it properly. They don’t move on from where they are” (F/PPS/76).
**Using positive coping strategies.**

When addressing key factors important to ageing successfully with a disability, many participants also spoke of the need to remain flexible and self-aware, and to accept change and adapt routines, mindsets, and acknowledge new limitations as they aged.

“...we need to adapt for our own situation” (M/SCI/51).
“...acceptance is a good thing, but er, it needs sort of optimism to make it not sort of a resigned acceptance” (M/SCI/62).

Universally, participants in the current study spoke about this as a frustrating but necessary part of getting through the day. Interestingly, there were some quite divergent perspectives on this within both groups: whilst all expressed frustration with changes they were experiencing, some talked about acknowledging and owning their disability and being proactive in terms of planning ahead for potential future needs, as one participant stated:

“...not being ashamed of your disability, accepting your disability and continuing life as you always have” (F/PPS/70).

For many, though, accepting that perhaps they weren’t able to do as much, and might have to split activities, pace themselves, or start using aids and equipment, was particularly difficult to acknowledge. For some it was related to having fought so hard to overcome their initial disability, whereas for others their concerns appeared to stem from past negative judgements they had experienced:

“...I think that comes from being told as children, the state doesn’t want a bunch of cripples, you get out there and be normal – we don’t want you to be limping around the place” (F/PPS/72).
Theme 4: Retaining a sense of independence and autonomy

This theme was salient across both groups, but particularly pronounced among participants with PPS, reflecting as can be seen in the quoted below people’s very earlier experiences with medical services in the acute stage of their disability.

“...I think probably it goes back to the early years of when you were having, in hospital, you’ve got no control over what happens to you...
“...we had absolutely no control over what happened to us. You know from day one we were tied down in splints and nobody ever explained to us, or tried to explain to us what was happening or why they were doing it. And it was just, you know, absolute submission! Because you didn’t know anything else. You didn’t know, well you can fight against it so you know, if you are going to age it needs to be on your terms...” (F/PPS/66).

Overall four subthemes were identified under this theme: 1) remaining autonomous and able to make own decisions; 2) importance of being able to drive; 3) maintaining appearances; and 4) avoiding reliance on others.

Every participant talked about the importance of retaining their own sense of autonomy and decision-making, and of not being made to do things they didn’t want to do, either by well-meaning carers, government agencies or simply through a reduction of choices. As one participant stated:

“... being independent is really, really important actually, the more independent you can be the better” (M/SCI/49).

It was clear from participants that many saw this these as central to retaining their self-efficacy and personhood as they aged,

“...as I got older, I don’t know whether I even realised I was doing it, but it was really important for me to be making decisions about what I was doing” (F/65/PPS).

In fact, statements about autonomy and control often overlapped with those relating to safety and security (in particular planning for the future), as well as those relating to fairness and respect and medical care. As one participant reflected:
"I don’t want to get to an age where my decision-making is taken away from me, you know, that’s the only thing I’m scared of” (M/SCI/50).

Other participants spoke about well-meaning people sometimes trying to help, but in doing so often taking over and failing to consider the person they are doing this for; “doing things to me rather than collaborating with me” (F/PPS/65). Another participant cautioned;

“...make sure that the person you are supporting is being supported the way they want to be, not the way you think they should be” (F/PPS/66).

A number of the participants with PPS, particularly for those for whom their disability might be less visible, also discussed this in terms of trying to disguise their struggles from those around them:

“I have been denying it because I don’t want the inconvenience of you know, everyone grabbing at me. And that is a nuisance. I start grabbing you every time you move, it drives you nuts! (M/PPS/72).

“... you don’t like to admit you can’t do something. That’s the whole thing” (F/PPS/78).

“I don’t want to be seen as less able than I was! Even though I am, but I don’t want to be seen as less abled, I want to be seen as, as that person who has continued through doing all the things that they have always done” (F/PPS/66).

Others (44% PPS) and (50% SCI) talked about their fear of losing their cognitive abilities or ability to communicate such that they became dependent on others to look after them:

“... I refused any, any shots because I needed to know, I’m terrified of not being clear in my head” (F/PPS/72).

“I am quite independent, I just worry that I might lose my independence as I get older. And most people who are ageing, you know not only those who are disabled have that…” (M/SCI/50).

“It would be difficult for someone who is unable to communicate very well, whether it is unable to speak or, unable if they’ve got a brain injury. Then they are very much at the mercy of whoever is with them and looking after them” (M/SCI/49).
Moreover, for the majority of participants, one the most salient and tangible symbols of lost independence was related to driving.

“I’m not going to be a passenger all the time” (F/PPS/78).

“I’m dreading the day when I won’t be able to drive...when I finally got my license, and a car, and I could just get in the car and go whenever I wanted, without having to say to somebody could you take me here please, could you take me and come and pick me up. And it, you know, just that freedom that I hadn’t had until them. Because, you know. So I suppose that kind of thing still sits with me…” (F/PPS/66).

“They just don’t go [out], especially if they are not able to drive” (M/SCI/62).

For those who had already had to give up driving this represented a major loss, as one participant with PPS explained:

“it’s hard because I had to give up driving and everything when I could no longer walk and get in and out of the car. I was getting in and out of the car from the wheelchair but that was causing a lot of strain. So I had to make the decision, was my health more important than my mobility, and it was!” (F/PPS/70).

Theme 5: Social engagement and participation in community

All participants acknowledged the importance of proactively staying in touch with family, friends and the wider community as a means of avoiding isolation, remaining stimulated and enhancing wellbeing. As one, participant with PPS concluded:

“I’d rather wear out than rust out, so I take a tablet and off I go. Because I am going to see people.” (F/78/PPS).

Overall five subthemes emerged within this theme: 1) the importance of a positive support network; 2) proactively maintaining social links 3) relationships and sexuality 4) pets as companions; and 5) making time for fun.

Importantly, participants from both groups acknowledged interactions between multiple dimensions including positive psychological resources such as resilience and positive affect and remaining socially connected, indicating that they acted together to
help them maintain a sense of wellbeing and belonging.

“You may not be physically well and you might be suffering and stuff, but if you are still are happy and involved and engaged, then I think you are ageing successfully” (M/SCI/50).

All participants openly discussed the importance of positive social supports in helping to maintain physical and mental wellbeing and to facilitate successful ageing. Although all participants were able to relay examples of how their unofficial social network had provided considerable support at times of stress or as their physical abilities had waned over time, this assistance was particularly poignant among females and participants with post-polio syndrome:

“… that left me on my own... except for an amazing group of friends” (F/PPS/72).

“I live in a world of nice people” (F/PPS/76).

“... when you have good support system around you. I think that’s so important for mindset” (F/PPS/60).

“... most people are more than happy and willing to support you, because they want you to be able to age well” (F/PPS/66).

Participants were also profoundly aware of the importance of managing oneself and one’s actions to proactively maintain these links, so as to avoid isolation and remain stimulated:

“...once you become apathetic you start to lose all your contacts, and you age much quicker I think, your mind deteriorates” (M/SCI/50).

“I am involved in many activities of the community with friends, with family” (F/SCI/40).

“... some people have said they’re so lonely erm – well gee, you need to get out a bit...you can’t expect the world to come to you, you’ve got to put yourself out there” (F/PPS/76).

Equally important to many participants with disabilities, and perceived to be undervalued and/or overlooked by many able-bodied observers, was the important role of relationships and sexuality. As one 76-year old male participant with an SCI observed: “...my wife again, she gives me so much strength”.
Others lamented the lack of awareness in the community as a whole:

“I think the aspect that is totally ignored around disability and ageing or disability in general is around sexuality. I think that people with a disability are seen as asexual. People who are ageing are seen as even less likely to be interested in sex or anything else” (F/PPS/66).

Others across both groups, although certainly more pronounced among those with an SCI, acknowledged that for people ageing with a disability, maintaining relationships can be hard, and at times personality factors can get in the way:

“... [a relationship] is certainly good for you, not for everyone again, but a lot of people for self-esteem, there are certainly lots of people who wish they had one and have difficulties, certainly people with disabilities, not only but again partly because of their own lack of confidence, social skills and all sorts of things, lack of money sometimes, makes it hard. But erm, since they’ve already got obstacles to overcome, in the way that society looks at them and so forth, but a real lot of it is about your social skills and attitude” (M/SCI/62).

It’s sort of a lonely life spinal...I push it away. I don’t want to be smothered” (M/SCI/52).

On a more positive note, over 50% or participants mentioned the importance of accessible activities and travel options for enabling those with disabilities to participate in society. Many endorsed their importance in terms of making new friends, avoiding isolation, keeping in touch with family, experiencing new cultures and ultimately improving positive affect and increasing the sense of ageing successfully:

“I am playing golf, in a golf club, ..., golf club, they have a special cart for us” (M/SCI/51).

“I have been to Fiji and New Zealand and Hong Kong and Singapore, and 30, about 30 countries in Europe. I have been to Africa” (M/SCI/62).

“I continue to go to the footy and, and the races, you know I will go down the pub for a drink and have a bet and I’ll continue to do that” (M/SCI/52).

“I’ve done some holidays and look I am grateful that I’ve got to 76 and managed to do a lot of the things that I’ve wanted to do, but I never thought I could do” (F/PPS/76).

“...I go to the theatre with friends” (P/PPS/78).
“I have been really lucky, I’m going overseas again this year with the friend I went into town with yesterday. Erm, and, and I see that as, as long as you can work long enough to earn the money to do it, and physically I can do it and it’s not too demanding on whoever I go with, erm, I just want to keep doing it. Because it is just fabulous to get the chance to do that. So you know ageing with a disability adds another dimension to it, to that sort of thing, that travel stuff, but, you know, if you don’t keep trying to do it, then you might as well just give up now and yeah go and sit in that little room in the nursing home.”

(F/PPS/66).

Theme 6: Retaining a sense of purpose

Retaining a sense of purpose, be it through advocacy, volunteering, or being involved in community activities, was reported as providing a number of important benefits for all participants, including facilitating the retention of cognitive capacities, enhancing mood and encouraging social engagement:

“Successful ageing to me would be like getting out, helping other people, not letting it get you down, thinking positive” (M/SCI/76).

“... if you have a sense of purpose and usefulness I think that is successful ageing” (M/SCI/50).

“... a lot of people are still working and still very involved in the community. And I think that’s a sign of ageing well” (F/PPS/70).

“See that’s another thing, your morale when you’re ageing is very important. It’s like feeling necessary, even for some little thing, it mightn’t be physical, it might be mental, it could just be taking somebody’s phone calls, or getting the mail. Necessary. It keeps your morale up” (F/PPS/76).

As one 72-year-old female participant with PPS stated, “... being useful is incredibly important.” Indeed, all participants in the study spoke positively about the sense of achievement they gained from helping others and contributing to society, as expressed by this participant: “...the mentor thing that we do now, that is the best, that is the best” (M/SCI/52). Reported benefits included providing a sense of fulfilment, feeling valued, respected and significant.
“I think if you have purpose and you have, then everything else comes nicely with ageing” (M/SCI/50).

“I try to be a positive role model you know, to my family, to my younger brother as well. Erm that was probably a big part of me doing, doing stuff, I guess to show that, maybe I have got a disability but I am spending my time wisely, just to hopefully rub off on them” (M/SCI/45).

“I was given the ability to write and then, then to express myself and I thought I should use that to help the polio community. I felt very strongly that was my role” (F/PPS/72).

Participants also spoke about being able to share knowledge and expertise to help others who may be struggling, and the joy they experienced when they saw others benefit from their efforts “… I’ve seen first-hand how it’s helped people” (M/SCI/52).

Another participant who volunteers at a centre for intellectually disabled adults stated:

“I just love them [those who attend] so much, that it makes me want to get up and out of bed in the morning and go there” (F/PPS/70).

One 78-year-old female participant with PPS summed up the important role that purpose played in assisting older adults achieve a sense of ageing successfully as follows:

“Well if they have been successful in doing something positive, something that they are proud of. Something they are happy they have done, something they have enjoyed doing. Instead of just ageing” (F/PPS/78).

Theme 7: Fairness, respect and recognition

Participants universally raised being treated with fairness and respect as being important for ageing successfully with a disability; describing how this helped to buffer and protect psychological resources, such as positive affect, and boost resilience. Participants saw themselves as better able to age successfully when they were supported by others who recognised the person, their strengths, and their experiences, and not just their perceived deficits. As a male 72-year-old participant with PPS explained;
“... it’s mainly people who understand your limitations, and not sympathetic, in sympathy forms, but understand and have empathy”.

This view was supported by the experiences of others who provided examples of instances where they had felt that the actions of others had devalued their efforts, or discriminated against them, impacting their ability to age well. This included reports of marginalisation at a number of levels including in relation to their sexuality. As one participant observed:

“... I can think of five marginalisations that I’ve suffered from without even trying to think” (F/65/PPS).

“... we all have our strong and weak points. We are all in this together. Yes so a little bit of affirmation would be really good” (F/PPS/65).

Others recalled disappointing interactions with healthcare professionals and government agencies, and described how these interactions could impact one’s self-esteem, sense of worth and motivation. One 49-year-old male with quadriplegia, for example, discussed his experience of a rehabilitation centre, stating:

“... there is a lot of negative attitudes in some of those places as well. They try and write you off, tell you that you are never going to be able to do this or that. And in some cases people rebel against that and achieve a lot, in which case it is okay but other people, I find it is a bit sad that they just sort of say ‘oh okay’ and then give up”.

Others similarly discussed their disappointment with treatments they had received:

“I think you know part of the post-polio syndrome is fatigue and which a lot of doctors won’t, don’t recognise when they first see you, they put it down to chronic fatigue, but it’s no chronic fatigue” (F/PPS/70).

Similarly a 60-year old female with PPS explained that an interaction with a government customer service centre exacerbated her sense of distress and vulnerability:

“... yes I’m this old and I’ve got this disability, and there is somebody at the other end of the phone who should be helping me who don’t care two sh*ts because it’s just a job for them. No, it’s not
a job, if you’re going to take that job, be more compassionate and be more caring!”

PPS participants, in particular, described feeling forgotten, overlooked and disregarded by the government and welfare agencies, with one 72-year-old female polio survivor observing, “‘End Polio Now [an initiative by Rotary International to fund global polio vaccinations for children]’ has made us even more invisible”.

Most recently these concerns had been exacerbated by proposed changes to (Australian) government disability funding that is scheduled to be cut-off for those born pre-1950:

“... most of us [polio survivors] were born pre-1950. And, and it’s just been really insulting!” (F/PPS/72).

“... it’s a bit degrading. I mean you’re not a second class citizen and I mean we’re about the only people in the community that don’t get help from the government” (F/PPS/78).

One participant explained the frustration that many people with disabilities experience due to what are perceived as unfair and prejudicial rules.

“I tried for a disability pension and they said, ‘well you have got a disability, but you have qualified for it under 2 different sections and to get a disability pension you need to get all your 20 points in one section’.” (F/PPS/65).

For many, government policies such as these were often perceived as the ultimate betrayal and rejection, after having worked hard for many years despite their disability. As one participant explained: “I worked all my life, well for as long as I could, and I contributed, and I didn’t get any benefits from it. That makes me angry” (F/PPS/78).

Indeed PPS participants universally reported difficulties accessing the help that they needed in a timely and sensitive manner. For many, interactions such as these simply reflected the prejudices and negative attitudes they had been fighting since childhood.

“... there was a lot of fear about polio and people in the street you know avoided you and that sort of stuff”(F/PPS/72).
Participants across both groups, also spoke about how the wider community need
to be more cognisant of the needs of those with disabilities, in order to create a fairer and
more inclusive society. Problems with accessing buildings, transport, and disabled
parking were cited as hindrances to being able to participate in community activities.
One participant recounted the experience of one of her contacts, explaining:

“...there was a young Vietnamese girl with polio in a wheelchair: got
herself a job as an accountant; fronted up for the job; couldn’t get
into the building” (F/PPS/72).

Other participants reported similar problems when trying to access health centres,
office units and even retirement homes. As one participant put it:

“... it doesn’t matter who you are, you are going to end up you don’t
want steps” (M/SCI/76).

Others raised concerns about the importance of relationships and sexuality not
being recognised for disabled persons, and the impact this could have if they were forced
through ill-health to move into supported living facilities. For instance, a 66-year-old
female participant with PPS observed that:

“...people with a disability are seen as asexual. People who are
ageing are seen as even less likely to be interested in sex or anything
else. But I think that is one of the biggest things, whether it’s for
couples who are ageing where one has a disability or not, if the fact
that that relationship is not honoured if people need to go into care”
(F/PPS/66).

**Theme 8: Safety and security**

Participants reflected on the importance of achieving a sense of safety and security
as one ages. Of particular note was having access to adequate income and secure
housing that is tailored to current and future mobility and disability needs. Achieving
and maintaining an adequate level of income revealed a sense of vulnerability that many
of the participants, particularly those reliant on government services, felt in terms of being able to access appropriate help as they age.

Participants from both groups, for example, were cognisant of the importance of having sufficient income to enable individuals with disabilities to participate in society, remain socially connected, and pay for new equipment and home modifications as necessary. As a 40-year-old female participant with an SCI explained:

“...if you have the money you can do tennis, you can do this, you can do that, and you are not worried. But if you don’t have the resources then yes, the things are there but I cannot access them, so don’t expect me to be ageing well when I don’t even have the money to pay my rent!” (F/SCI/40).

Another participant summarised the point, stating:

“...it helps to not be desperately poor. I know that certainly affects people’s outcomes when they get older” (M/SCI/62).

Certainly, those participants reliant on government assistance expressed uncertainty and frustration about proposed changes to government funding in terms of their ability to remain independent and to afford the necessary assistance or equipment they need as their conditions worsen. In fact, over 70% of participants raised concerns about having sufficient funds in later life to be able to pay for home adaptions and mobility aids so that they could remain in their homes for as long as possible:

“...the government is taking all of the support systems away” (F/PPS/60).

The majority of the participants with an SCI were in a more financially stable position relative to their counterparts with PPS due to insurance payouts that those with PPS were not entitled to. As one participant explained: “I am lucky enough that I have the support with TAC [the Transport Accident Commission, which pays benefits to
people injured in transport accidents], _but a lot of my friends they don’t. So, they don’t have the carers maybe that I have, or the services that I have_” (F/SCI/40).

Closely linked to income levels, the majority of participants raised the importance of being able to access assistance to remain in their own homes for as long as possible:

“... _losing my environment, ... is one of the things I actually fear most_” (M/SCI/50).

As part of this, participants raised the need for appropriate supported housing options to be available for older people with disabilities as they age and their conditions potentially worsen:

“... _it’s people like myself, who want to stay in their own home for as long as they can, that I can still get the equipment I need_” (F/PPS/70).

“... _success for me is to be still living in my own home maybe 10 or 15 years from now. And being able to do stuff. That’s fairytales to me._” (F/PPS/60).

Interestingly even middle-aged participants discussed the importance of planning ahead and identifying how and where future care needs can be met;

“... _like small units that are part of a condo where I think they have doctors available and things like. But each person lives independent, but they have the alarm things in case there is an emergency_” (F/PPS/40).

**Proposed dimensions of successful ageing with a disability**

Overwhelmingly participants in Study One described successful ageing with a long-standing disability in terms of a multidimensional construct. The eight themes reveal a broad range of intrinsic (e.g. positive affect, resilience, determination, attitude, respect) and extrinsic/macrosocial (e.g. government policies, accessible and inclusive services, societal openness and support) influences that had positive or negative impacts on participants’ perceived ability to age successfully. As such, the preliminary model
shown in Figure 4 takes into consideration insights from Study One participants relating to their perceived position within broader social, cultural and political systems and processes. Participants, for example, described how interactions between individual resources and wider political and social factors can exert a positive or negative influence on their ability to age successfully, thus providing accumulating evidence for the need to adopt a biopsychosocial perspective (Iwamasa & Iwasaki, 2011; Jopp et al., 2014; Reichstadt, Sengupta, Depp, Palinkas, & Jeste, 2010; Tesch-Römer & Wahl, 2017) to develop a more inclusive model of successful ageing that is relevant to those ageing with a disability.

*Figure 4: Diagrammatic representation of successful ageing with a disability*
Participants described successful ageing in terms of eight different domains: 1) Looking after physical health; 2) Retaining cognitive abilities; 3) Positive psychological resources; 4) Retaining a sense of independence and autonomy; 5) Social engagement and participation in community; 6) Retaining a sense of purpose; 7) Fairness, respect and recognition; and 8) Safety and security. Figure 4 positions each of the above themes as separate, yet interrelated and interacting dimensions, each of which helps to support an individual with a disability to age successfully. It is suggested that each dimension acts like a spoke in a wheel, protecting the hub and facilitating an individual’s sense of ageing successfully. Additionally, the positive extrinsic influences identified, are depicted as an encompassing circle, or tyre that surrounds the wheel, potentially cushioning individuals from negative influences such as environmental deprivation, perceived discrimination, stress and social exclusion. Thus the proposed model shown here acknowledges that, in many cases, the ability to age successfully with a disability is not wholly dependent on the individual, but also requires, and is influenced by, the availability of adequate resources such as quality health care, accessible and inclusive services, financial security and appropriate housing options and opportunities for social participation. For, without these basic necessities being met, one is seldom able to prioritise looking after one’s health and wellbeing. Indeed, importantly the data suggests that individuals with impairments and disabilities view ageing in more collectivist terms than previously reported, often reflecting their position within broader social systems (e.g. health and welfare systems) and processes. So for example the emergent dimensions of “fairness & respect” and “safety & security” appeared to be particularly salient to participants in this study.
CHAPTER 7: STUDY ONE DISCUSSION

This chapter discusses the results of Study One and offers evidence in support of the findings. It also aims to examine the insights gained and suggests directions for the next quantitative research study.

Study One used an emic-based inductive research methodology to investigate the components of successful ageing as perceived by individuals ageing with a long-standing disability. The study sought to understand participants’ perceptions and experience of what it is like to age with a disability and aimed to capture participant’s views of the concept of ‘successful ageing’. The following sections will discuss these findings in greater detail.

Perceptions and experience of what it is like to age with a disability

Overwhelmingly participants viewed themselves as being far from disengaged as they age. Participants reported that in many respects, their older selves were similar to their younger selves, albeit that they are often limited in the activities they are able to undertake. This suggests that for those ageing with a disability, the continuity theory of ageing (Atchley, 1989) is more closely aligned to their experiences. Moreover, all participants considered themselves to be ageing successful, although they preferred the term ageing well. While traditional models of successful ageing such as those proposed by Rowe and Kahn, (1997) assume a poor prognosis in terms of being able to ageing well with a disability, Study One demonstrated that despite the assertions made in much of the successful ageing literature to date, it is indeed possible for individuals with a long-term disability to perceive themselves to be ageing successfully. In this regard, this finding more closely aligns to the earlier research undertaken by Strawbridge,
Wallhagen, and Cohen (2002) and Phelan, Anderson, LaCroix, and Larson (2004) into layperson views of successful ageing, providing accumulating evidence of a mismatch between academic definitions and what individual’s actually feel. What is clear, moreover, is that the current “successful ageing” criteria as posited by Rowe and Kahn (1997) do not adequately represent the factors considered important for ageing successfully with a disability as viewed by older persons themselves. Indeed, unlike the bio-medical model proposed by Rowe and Kahn (1997), participants in Study One clearly saw ageing well as being able to maintain a balance across multiple interacting domains whilst also retaining an awareness of the limitations of an ageing body.

Participants described ageing as a natural, albeit frustrating, time of life, acknowledging, as previously reported by Kemp and Mosqueda (2004) and Groah et al., (2012), that the process of ageing is often accelerated for those ageing with a disability. Older participants, in particular, noted that physical issues appeared to compound each year requiring frequent adjustment and compensation as suggested by selective optimisation with compensation theory (Baltes & Baltes, 1990). The examples provided by participants suggest that this adaptation process has become almost second nature to many, and is even a source of pride to some. Indeed, in spite of the challenges faced by many of the participants, most recognised that as they have aged, they have also achieved a greater acceptance of themselves and their achievements. This finding provides support for the research reported by Reichstadt, Sengupta, Depp, Palinkas, and Jeste (2010) that older able-bodied adults viewed successful ageing as a balance between self-acceptance and self-contentedness on one hand, and engagement with life and self-growth on the other. Certainly, in this study, participants reported that social interaction and ongoing purpose in life worked as sources for enhancing self-esteem, providing a sense of belonging to community and boosting positive affect. Interestingly, participants also reported mixed views about the term ‘successful ageing’ itself. A number of the
participants commented that the term was too ‘idealistic’ and carried with it a connotation of external judgement. This suggests that participants’ views support earlier arguments that speculate that the medical model upon which the successful ageing paradigm rests, is inadequate and inappropriate for those ageing with a long-term disability (Asch, 2001; Gill, 2001; Martinson & Berridge, 2014; Olkin, 1999). After all, as the above commentators argue, the medical model is predicated in the assumption that functional impairment will inevitably lead to life judged to be unsatisfying and without value (Asch, 2001). This assumption and judgement were both clearly disputed by participants in this study. Moreover, it was clear from the perspectives shared by participants in this study, that although adjustment to disability can be difficult in the short-term, it is not necessarily a permanent state. For this reason, some participants preferred the term ‘ageing well’, as it was seen as a more accurate reflection of people’s subjective experience and focused less on perceived losses as suggested by the 2014 study by Monahan and Wolf. Moreover, given that participants openly spoke of the obstacles they faced in terms of society's lack of understanding and accommodation of their needs, it may be argued that the participants themselves were more likely to endorse and recognise the social model of disability (Olkin, 1999).

**Dimensions considered important for successful ageing with a disability**

In terms of the elements considered important for successful ageing, or ageing well, overwhelmingly, study participants discussed this in terms of multiple, interacting aspects of life encompassing a range of individual, social, cultural and political factors. Overall eight key themes emerged from the data, four of which – maintaining physical health; social connectedness; positive psychological resources including resilience and adaption, and retaining autonomy and control – were similar to those previously reported by Molton & Yorkston (2017). Two – retaining cognitive abilities and
maintaining a sense of purpose – have previously been found to be important in research among those ageing without a disability (Feng & Straughan, 2017; Iwamasa & Iwasaki, 2011) although they have not been reported in research into successful ageing with a disability. Two new themes – being treated with fairness and respect; and sense of safety and security – emerged from the interviews, neither of which have previously been reported in the literature regarding successful ageing. Each of these emergent themes will be discussed separately below.

**Physical health**

Consistent with earlier research undertaken with older adults ageing without a disability (Rowe & Kahn, 1997; Phelan, Anderson, LaCroix, & Larson, 2004), and those ageing with a disability (Molton & Yorkston, 2017) looking after physical health emerged as an important theme for participants in this study who perceive themselves to be ageing successfully. Many noted that despite chronic pain and physical limitations, their quality of life remained high. These findings have also been observed in earlier studies. As an example, studies by Albrecht and Devlieger (1999) and Dunn, Uswatte, and Elliott (2009), noted that individuals often reported their quality of life as high despite physical limitations. This is despite findings that although relative to the general population, individuals ageing with a physical disability are likely to have a higher risk of experiencing chronic pain and fatigue, functional decline is not necessarily inevitable (Amtmann, Borston, Salem, Johnson, & Verrall, 2012; Bombardier, Ehde, Stoelb, & Molton, 2010; Molton, Terrill, Smith, et al., 2014). What is clear though is that ageing successfully and maintaining high quality of living often involved conscious adaptation and undertaking strategies to actively protect and maintain existing abilities.

Many participants in the study for example, discussed the importance of managing secondary conditions as essential to successful ageing. Most notably, those participants
with an SCI mentioned the need to proactively manage skin and bowel health, weight management and pain, while participants with PPS spoke of the need to manage fatigue and muscle weakness to ensure that they did not impact valued activities. Based on these findings it may be suggested that the participants in our study were more proactive in terms of managing their physical health relative to those who participated in the earlier longitudinal study by Clarke and Latham (2014). In that study, adults aged 20-34 in 1979 were observed annually for 30 years to age 50-64. During this time 544 reported a work-limiting injury (defined as four or more reports of a work disability over a 14 year period when people were aged 22-49). The authors found that compared to the 3,881 participants who were ageing without a work limiting injury during mid-life, those ageing with a work limiting injury were more likely to practice poor health behaviours such as smoking or sedentary activity (Clarke & Latham, 2014). Perhaps this highlights a key difference between those ageing ‘normally’ or ‘pathologically’ without a physical disability versus those ageing ‘well’ or ‘successfully’ with a disability. Indeed, it may be argued that similar to populations ageing without a disability, those who proactively take care of their health may be more likely to age successfully.

Similar to the findings of Molton and Yorkston (2017), participants in this study also spoke of the need to remain flexible and self-aware, and to accept change and adapt routines, mindsets, and acknowledge new limitations as they aged so as not to exacerbate existing or create new problems. Importantly, it appears that these findings provide strong support for the theory of Selective Optimisation with Compensation (SOC) theory (Baltes & Baltes, 1990). For example, participants discussed how ageing well, involved becoming more selective with the activities they undertook as they aged, so that they were able to continue to complete their most valued activities with their limited energy resources. Participants also spoke of undertaking more strenuous activities in the morning, when they had more energy, reducing the requirements on
themselves as the day wore on, in a process akin to optimisation. Finally, participants also discussed the need to adapt and incorporate new equipment such as orthotics and electric wheelchairs into their lives to offset the impact of new physical limitations that emerged over time. One difference, however, is that while SOC focuses purely in the individual, this study reveals that ageing successfully or well with a disability also requires appropriate external support and resources. For example, participants spoke of the need for good medical support from health care professionals who are empathetic, knowledgeable, and who have the appropriate equipment and training. These findings also complement those reported by Molton and Yorkston (2017), and provide further support for the social model of disability, which argues that lack of appropriate systems, and processes can act as a significant cause and contributor to disability for an individual (Olkin, 1999).

**Independence and autonomy**

Participants described one of the defining characteristics of ageing well, as being able to maintain their independence, while negotiating and adapting to the intertwined functional declines associated with ageing and disability. Support for the importance of retaining autonomy and independence can be found in earlier studies conducted with older adults ageing without a disability (Ryff, 2014; Ryff and Keyes, 1995), and those ageing with a disability (Molton & Yorkston, 2017). In each of the above studies, the retention of a sense of autonomy as one ages, was seen as key to maintaining a sense of wellbeing and eudemonia. In fact, Tesch-Romer and Wahl, (2017) argue that autonomy and quality of life may well be considered endpoints of successful ageing. Certainly Baltes, Maas, Wilms, Borchelt, and Little (1999), recognized the importance of autonomy as an indicator of positive adjustment to ageing.
In this study, participants’ desire for independence, appeared to stem from a strong desire to avoid becoming dependent on family, friends, and care staff; a finding that is borne out by existing qualitative based disability literature (Rudman & Durdle, 2009; MacLachlan, Rudman, & Klinger, 2007). In describing their thoughts and actions, many participants in our study, described the denial of the need for help as an attempt to retain their independence, and to ensure that they retained autonomy and control over decision-making and were not being made to do things they did not want to do. In particular, many of the participants indicated that they were concerned that their autonomy would not be fully respected within health and community care environments. These concerns were also raised in a study of older Swedish adults who had either recently received hospital treatment (Ekdahl, Andersson, Wirén & Fredrichsen, 2011) or been assessed for home help services (Janlöv, Hallberg, & Petersson, 2006). Additional empirical research also bears out these findings, suggested that an individual’s autonomy may come under increasing threat when chronic health conditions increase functional limitations (Fortin, Bravo, et al., 2006; Fortin, Lapointe, et al., 2004; Woolhead, Calnan, Dieppe, & Tadd, 2004). Even for those ageing without a disability the likelihood of experiencing such limitations increases drastically as one ages (Barnett, Mercer, Norbury, Watt, Wyke, & Guthrie, 2012). Recent prevalence data based on information from 314 medical practices in Scotland for example, found that 65% of people aged 65–84, and 82% of people aged 85 and older suffered from two or more chronic conditions such as cardiovascular disease, diabetes, and depression, all of which are associated with negative functional impacts (Barnett et al. 2012). It is argued that these limitations create challenges to autonomy by restricting an individual’s ability to engage with valued activities (Löffler et al., 2012).

Moreover, research conducted by Flick, Fischer, Neuber, Schwartz and Walter (2003), suggests that having and maintaining a sense of control in life and exercising
independence and self-determination are important factors that facilitate the maintenance of positive health and well-being in old age. Indeed, the majority of participants in this study reported that retaining their autonomy as they age was critical to supporting their perceptions of ageing successfully, although for many this determination was tempered by an underlying fear that this may not always be under their control. These results align with those of Molton and Yorkston (2017), who found that retaining a sense of autonomy and control over decision making was seen a key to ageing successfully with a disability among their participants. However, unlike the study by Molton and Yorkston, many of the participants in the current study also reported a desire to retain their independence physically as well as mentally, with most abhorring the thought of becoming dependent on others, even in terms of transportation. Indeed, two male participants even spoke of ending their own lives before they would allow themselves to become dependent. It is possible that this rejection of dependency stems not only from early experiences and hard fought battles to overcome initial adversity, but also from adopting subconscious messages that also reinforce the construction of older adults as dependent. In their qualitative study looking at ageing in a cohort of older adults with age-related vision loss, for example, McGrath, Rudman, Polgar, Spafford, and Trentham (2016) found a similar pattern concluding that the pursuit of independence may be influenced by the dominant Western view of independence as being “the absence or avoidance of dependence” (McGrath, et al., 2016, pp. 7). Certainly participants discussed the importance of not being seen as old, passive and dependent, acknowledging that they viewed these characteristics in a negative light. Thus it may be suggested that participant’s views are also influenced by their attitudes towards ageing.

The potential role that ageism and negative age stereotypes, prevalent in Western societies, may play in the formation of attitudes to ageing and in the hindrance of ageing success is discussed in Swift, Abrams, Lamont, and Drury (2017). They argue that
negative attitudes and stereotypes can exert considerable persuasive power, affecting an individual’s sense of self-efficacy, independence and ultimately influencing older people’s actions and behaviours, in such a way as to result in deficits that contribute to stereotype fulfilment, and impede their potential to age successfully. Support for these findings can be found in research undertaken by Levy, Zonderman, Slade, and Ferrucci (2009), who found evidence which suggests that people who hold more negative stereotypes of older people may also expect worse outcomes from their own experience of ageing. In developing Stereotype Embodiment Theory, Levy (2009) proposed that an individual’s self-perceptions of ageing are the result of internalised stereotypes that influence how age-related changes are interpreted. Others have expanded upon this argument suggesting that negative attitudes towards ageing may in fact act as a stress–diathesis; creating in essence a personal vulnerability to react negatively to stressful events (Neupert & Bellingtier, 2017). In fact, studies have shown that older adults who held more negative views of ageing were more likely to consider depression an inevitable part of ageing (Quinn, Laidlaw, & Murray, 2009; Law, Laidlaw, & Peck, 2010). A meta-analysis of seven studies which examined the impact of positive and negative ageing stereotypes on behaviours demonstrated that the effects of negative age priming were almost three times larger than those of positive priming when compared with a neutral baseline and had a far greater effect on behaviour (Meisner, 2012). Taken together, these findings suggest that attitudes towards ageing may exert significant influence over physical health and wellbeing outcomes and as such should be examined as part of any model of successful ageing.

**Psychological resources including adaption, resilience and coping skills**

In another central theme emerging from this study, participants frequently noted the importance of persistence, and of adapting mindsets and behaviours to ensure that
they could continue to pursue the activities they valued despite pain and fatigue. Gattuso (2003) and Harris (2008) both suggest that the concept of resilience may be helpful in explaining how older people can adapt to potentially declining health and still achieve a sense of ageing well. Pruchno, Heid, and Genderson, (2015), have observed that although theorists such as Baltes and Baltes (1990) and Jopp and Smith (2006) argue that successful ageing requires adaptation to multifaceted challenges, in reality, adversity has not played a central role in successful ageing research, yet it may be argued that those ageing with a long-standing disability may face significant adversity and thus resilience will be of particular importance. Significantly, the authors contend that successful ageing literature has instead largely focussed on positive indicators of physical health as primary outcomes and largely ignored the stance taken by resilience literature which instead emphasizes good emotional health (Pruchno, Heid, & Genderson, 2015). Importantly, in their qualitative study exploring healthy ageing in older adults Stephens, Breheny, and Mansvelt (2015) also argued for the adoption of a capability approach to exploring ageing, an approach that recognises and promotes resilience rather than a focus on the physical side of ageing. Certainly participants in this study argued that the ability to persevere and respond positively to setbacks and functional limitations is fundamental to ageing successfully with a disability. Moreover, resilience was seen as key to offsetting the impact that the physical limitations may otherwise have on a person’s ability to undertake the activities they value. This finding is also consistent with research undertaken by authors such as Bonanno, who has consistently demonstrated that resilience can often enable individuals to persist and even thrive despite experiencing negative or traumatic events (Bonanno, 2004). Research has also examined resilience as it relates to adapting and coping with disability (Silverman, Molton, Alschuler, Ehde, & Jensen, 2015). To date though, research attention has not as
yet focused on the role resilience may play in ageing successfully either with, or without a disability.

Pruchno and colleagues (2015) contend that it is important to take a life course perspective to successful ageing; recognizing that individuals have the capacity for growth and adaption across their entire lifespan. They argue that struggles and adversities experienced throughout a person’s life can serve as the stimulus for resilience (Pruchno, Heid, & Genderson, 2015). Certainly participants in the current study have suggested that early experiences of overcoming disabilities have assisted them to develop adaptive coping strategies and positive mindsets. Several cross-sectional studies undertaken to date provide support to this finding, indicated that many individuals can adapt effectively to the emotional and functional impact of acquiring a chronic condition, ultimately reporting levels of wellbeing similar to those of non-disabled peers (Alschuler, Kratz, & Ehde, 2016; Suarez, Levi, & Bullington, 2013; Treharne, Lyons, Booth, & Kitas, 2007). Moreover, the above studies suggested that resilience may act as an important buffer against the development of negative mood, which may in itself impact an individual’s sense of ageing successfully. Supporting this idea, resilience is negatively correlated with depressive symptoms in cross-sectional studies of people with a spinal cord injury (Cantalano, Chan, Wilson, Chiu, & Muller, 2011; White, Driver, & Warren, 2010). A study by Terrill, Molton, Ehde et al., (2016) undertaken with 1862 participants with a long-term disability, found that participants diagnosed with muscular dystrophy (n=340), multiple sclerosis (n=584), post-polio syndrome (n=446) or spinal cord injury (n= 492) who met criteria for a major depressive episode also recorded lower levels of resilience as measured by the Connor-Davidson Resilience Scale (CD-RISC).

Positive psychological traits such as optimism, active coping, acceptance coping, positive reinterpretation and growth and purpose in life have also been found to be important components of resilience which in turn contributed to positive affect and
interpersonal relations in a study of 170 postmenopausal women (age = range 42-76 years, $M = 63.8$, $SD = 7.3$) who were diagnosed with rheumatoid or osteoarthritis (Smith & Zautra, 2008). Moreover, in the study conducted by Smith and Zautra, the authors divided the sample into four groups: (high vulnerability/low resilience (floundering) = 31%; high vulnerability/high resilience (struggling) = 19%; low vulnerability/low resilience (languishing) = 19%; low vulnerability/high resilience (flourishing) = 31%, based on the median splits on the Vulnerability and Resilience factor scores. Using this approach a more nuanced pattern of responses to stressors was found, leading the authors to argue that rather than thinking about people in binary terms, as being either vulnerable (e.g., high vulnerability/low resilience) or resilient (e.g., high resilience/low vulnerability), it was important to consider levels on both of the factors at the same time. Thus while some people may be more vulnerable to adverse events, even within that group, some may also possess resilient characteristics, such as a sense of purpose in life and an active approach to coping, that facilitates the experience of positive moments despite pain and stress (Smith & Zautra, 2008).

Higher levels of resilience were associated with increased social functioning in two studies that specifically examined ageing and resilience in older populations, (Kwong, Du, & Xu, 2015; Silverman, Molton, Alschuler, Ehde, & Jensen, 2015). The findings from Silverman et al’s. (2015) three-year longitudinal study, which explored functional outcomes in people ageing with a disability ($n= 1594$), also suggest that resilience not only allows people to adapt more effectively to difficult life events, it may also facilitate the management of ongoing social roles and thus participation in the community; an important aspect of successful ageing as identified by Rowe and Kahn, 1997. Furthermore, the authors also found that resilience and physical functioning were positively correlated at baseline, and that resilience moderated the association between depressive symptoms and low physical functioning at the first timepoint, suggesting that
individuals living with a disability, who are able to maintain their functional independence tend to be more resilient (Silverman et al., 2015), and thus may age more successfully.

**Safety and security**

Importantly, while the model proposed by Rowe and Kahn (1997), and the research undertaken by Molton and Yorkston (2017), capture some of the important components perceived to be important for ageing successfully with a long-term disability, there are some notable differences between the findings of this study, and those represented in the broader literature. For instance, of the 105 successful ageing models identified in the review by Cosco, Prina, Perales, Stephan, and Brayne (2014), none identified the importance of being treated respectfully, and only six identified “extrinsic factors”, such as finances, as being important to successful ageing. In our sample, however, a sense of safety and security, including access to secure housing and an adequate level of income to pay for basic needs including medical and/or mobility equipment and home assistance, was mentioned by three quarters of participants. While these factors have been largely omitted from previous descriptions of successful ageing (Cosco et al., 2014), research has consistently shown the deleterious effect that low socioeconomic status can have on an individual’s health and wellbeing over the long-term (Adler & Newman, 2002). At a population level, Hank (2011) found that lower socioeconomic status significantly constrained opportunities, and reduced the odds of ageing successfully. It is possible that the salience of this factor for participants in Study One, reflects not only the likely reduced earning capacity during middle age for participants with a disability, a factor which ultimately impacts their level of savings as they enter old age (Clarke & Latham, 2014), but also their increased reliance on government funding sources and external providers for mobility aids and equipment.
sources, many of which are being progressively scaled back and altered as governments seek to limit their financial exposure to an ageing population (Foster & Walker, 2015). Irrespective of the reasons, it was clear from participants’ comments that an inadequate income and insecure housing options creates a sense of uncertainty and vulnerability that affects an individual’s capacity to actively engage and participate in society, ultimately interacting with participant’s sense of being marginalised, demonised and treated unfairly.

**Fairness and respect**

It is perhaps not surprising, that participants in this study also saw being treated with fairness and respect as important. Participants noted that the way they were treated by others often directly impacted their sense of self-worth and identity, recounting instances where people crossed the street to avoid them or simply assumed they were incapable and took over for them without asking their opinion. Research by Bahm and Forchuk (2008) supports these findings with their study finding that 53% of participants with a physical disability described experiencing at least some degree of stigma or discrimination related to their impairment, which may lead to negative self-perceptions (Green, Davis, Karshmer, Marsh, & Straight, 2005). The essence of one’s sense of self is, after all, developed in reference to the reactions of others (Green, Davis, Karshmer, Marsch, & Straight, 2005). If, for example, we observe others to devalue our efforts and treat us as less than a whole person, this can naturally have an impact on our self-worth and impact our ability to age successfully (Crocker, Major, & Steele, 1998). Fortunately, the overwhelming majority of participants in this study appear to have fought against the stigma they have experienced. Many of our participants, for example, discussed early experiences of discrimination as proactively stimulating psychological resources, galvanising their desire to fight against their perceived unjust treatment. Studies
exploring responses to stigma in disabled populations have found a similar response, suggesting that, for some, rather than leading to the acceptance of negative stereotypes, these experiences can motivate a determination to overcome adversity by embracing positive self-perceptions (Shih, 2004). Certainly, the role of positive psychological functioning was emphasized by participants in both this study and that of Molton and Yorkston (2017), with all participants endorsing the importance of positive self-esteem, self-acceptance and adaptive coping skills, such as resilience and tenacity.

It is possible therefore that an individual’s ability to respond to stressors and remain resilient in the face of difficult circumstances, may be affected by their perception of being treated fairly and respectfully. Indeed, multiple social and behavioural theories propose that biological determinants alone are insufficient to account for overall health status and subjective wellbeing (Cummins & Nistico, 2002). It is posited that there are many additional elements, including minority status, perceived discrimination and unfair treatment (Centres for Disease Control, 2007; Minkler, 1996) that can socially determine and potentially magnify or decrease health disparities and ageing outcomes (Coreil, 2010; Schnittker & McLeod, 2005).

Findings from the current study may therefore suggest that being treated fairly and respectfully supports successful ageing; enabling individuals who are ageing with a disability to feel valued and appreciated, thus positively influencing their mental wellbeing (Ranzijn, Keeves, Luszcz, & Feather, 1998; Young, Rice, Dixon-Woods, Colver, & Parkinson, 2007). Analogous with findings from this study, a qualitative study undertaken with 72 older people, (median age = 72) from the UK, also found strong evidence to suggest that dignity and respect were salient concerns among older people more generally (Woolhead, Calnan, Dieppe, & Tadd, 2004). For example, participants in the Woolhead et al., (2004) study voiced their concerns about the rate and provision of
government finances and policies, deeming them to be inadequate to support the rights of older people to be able to participate in society and age successfully. Importantly, research has also suggested that the ability to exercise autonomy as one ages is also conditional on people and society viewing older adults as reliable and worthy of being listened to; in essence treating older people with due respect, fairness and consideration (Eklund, Mårtensson, & Eklund, 2014).

**Cognitive functioning**

In light of the above, participants’ expressed need to retain high levels of cognitive functioning so as to retain their autonomy and sense of control, may also be reflective of a perception that their own desires are often overlooked and disregarded by others. Significantly, one important difference between this study and earlier studies of older adults ageing without disabilities, was that, while many studies with older adults appear to endorse cognitive function in broad, rather abstract terms (Iwamasa & Iwasaki, 2011; Phelan, Anderson, LaCroix, & Larson, 2004), for individuals ageing with disabilities the need to retain cognitive functioning was endorsed as paramount. Indeed, many participants described cognitive functioning as being fundamental to maintaining their sense of self and identity. Participants, for example, discussed their reliance on cognitive abilities to plan ahead, negotiate everyday obstacles, and to also advocate for their rights, including their right to age in place. Indeed, the results of the current study suggest that cognitive function was closely linked to a desire to retain control and autonomy over future health and housing decisions, possibly due to concerns that if they were to lose these skills then they would likely be moved into supported housing that was ill-equipped to deal with individuals with physical impairments.
Sense of purpose

Participants in Study One also reported that activities that promote a sense of purpose and usefulness were especially valuable in assisting them to age successfully in spite of any functional limitations. Importantly, participants listed a number of important benefits that they derived from their efforts, such as achieving a sense of accomplishment, the development of strong social support networks, enhanced self-awareness and self-realisation, as well as a sense of contentment, gratitude and acceptance of themselves. These findings strongly align with the work of Viktor Frankl, (1958, 1962) who observed that life can remain meaningful even during conditions of extreme adversity. Frankl argued that even in the bleakest circumstances, people who are able to perceive a sense of meaning or purpose, are able to chose how to react, so that despair may be avoided or at least reduced to manageable levels (Frankl, 1958). In arguments closely echoed by our participants, Frankl suggests that the lack of a sense of purpose may also enhance existing vulnerabilities, creating a sense of emptiness and boredom which can ultimately lead to depression and anxiety (Frankl, 1958).

In psychological terms, the construct of purpose in life, describes the tendency to derive meaning from life’s experiences and to remain focussed and committed to working towards and achieving meaningful goals (Ryff & Keyes, 1995). It is argued that a sense of purpose provides a framework or set of beliefs that make the world more easily understood and coherent (Antonovsky, 1979). In their conceptual framework for understanding the significance of a sense of purpose in life, Scheier and Carver (2001) suggest that both a sense of purpose and positive expectations, (e.g., hope and optimism), are essential for achieving an individual’s goals. Thus the authors suggest that a sense of purpose is derived from initially identifying a worthy and valued goal or set of goals; these form the purpose element. The additional requirement is that the
valued goals must be perceived as being achievable and fulfilling. The desire to succeed in ones’ goals thus motivates the individual to remain engaged in the expectation of one day reaching their goals and achieving fulfilment (Scheier & Carver, 2001). Within this framework it is not difficult to see how having valued goals and a sense of purpose in life as discussed by participants in Study One, may provide the motivation for those ageing with a disability to maintain mental and physical health in the midst of adversity.

In fact, purpose in life has long been hypothesized to protect against adverse health outcomes (Frankl, 1963; Ryff, 1989; Ryff, Singer, & Love, 2004).

It must be noted, however, that while considerable research has examined associations of sense of purpose with positive outcomes across the life span in healthy adults or those ageing with late-onset age-related disabilities, there is a paucity of research into ‘how’ a sense of purpose can assist individuals with a long-term disability age successfully. As such the findings of the current study may be argued to extend the existing research in this area. To date, much of the research in support of our findings has also emerged as themes from qualitative studies (Chuang, Yang, & Kuo, 2015; Davis, 2009). As we found in Study One, many participants reported that maintaining a sense of purpose is essential to find a way to cope with their disability and move on with life. Chuang, Yang, and Kuo (2015) for example found that regaining a sense of purpose assisted Taiwanese individuals with spinal cord injury cope with, and move on from their disability post-injury. This study is however limited by a small sample size (10 participants), all of whom were fairly young (Mean Age = 37.5, Range = 23-44) with 30 per cent having acquired their SCI less than 5 years earlier (Chuang, Yang, & Kuo, 2015). Likewise, a study by Davis, which specifically examined ageing and disability, found purpose in life to be an important factor, however the study was limited by a small sample size (11 individuals), only four of whom had physical disabilities and again the age profile was skewed towards younger participants (age range 23 to 62 years).
In spite of the limited research into the relationship between purpose in life and ageing with a long-standing disability, a sense of purpose in life has certainly been found to underlie various positive psychological states (e.g., positive emotions) and personality attributes (e.g., competence) that are frequently associated with health and well-being (e.g., Boehm & Kubzansky, 2012). In cross-sectional analyses, for example, purpose in life has been associated with positive psychological outcomes including happiness, satisfaction, and self-esteem, greater positive affect, fewer symptoms of depression, as well as aspects of physical functioning, including better sleep, greater longevity, more positive self-ratings of health, and lower levels of functional limitation (Boyle, Barnes, Buchman, & Bennett, 2009; Krause, 2009; Ryff, Singer, & Love, 2004; Ryff, & Keyes, 1995; Steger, Oishi, & Kashdan, 2009; Steptoe, O’Donnell, Marmot et al., 2008; Windsor, Curtis, & Luszcz, 2015; Zika & Chamberlain, 1992). Taken together these findings suggest that purpose in life may indeed be an important contributor to maintaining a sense of ageing successfully.

**Social engagement**

In the final theme emerging from this study, participants also discussed the importance of remaining connected to important others, and well as with the wider community. A study by Raymond, Grenier, and Hanley (2014), also identified social roles and the ability to engage in pro-social behaviour to help others as important sources of dignity for older adults, suggesting that interventions and programs that provide social support and connection, as well as opportunities for engagement in meaningful activities would be beneficial for ageing successfully with a disability. Importantly, participants’ descriptions of these activities and their benefits closely reflect perspectives addressed in the life-span models of Baltes and Baltes (1990) and Erikson and Erikson (1998) in terms of focusing their available abilities and resources to the
areas of life they consider important and meaningful. This study’s findings support these life span models, and adds to them by acknowledging the additional influences of the wider socio-political environment on an individual’s perceived ‘success’.

**Reflexivity**

Much has been written on the positioning of the researcher in qualitative research, with ongoing debate regarding the advantages and disadvantages associated with the researcher’s position as either an ‘insider’ or an ‘outsider’ (Dwyer & Buckle, 2009). It is worth noting however, that the participants in this study did not seem to perceive the researcher’s outsider status as an impediment to the research process. In fact, many commented on the benefits of having an independent researcher involved and interested in their experiences.

That is not to say that the researcher had no knowledge of at least some of the challenges faced by adults living with a disability. As part of a clinical training placement, the researcher had been working with adults with physical and intellectual disabilities one day a week for about a year at the time of the interviews. While this clinical experience facilitated access to the study population, it should be recognised however that this in no way made the researcher an expert in this area, and this was discussed with participants at the start of each interview. The researcher was, however, broadly aware of some of the ‘hot’ topics that participants discussed in the context of ageing with a disability. For example, at the time of the interviews, there was significant discomfort among those ageing with a disability about access to future financial assistance from the government for aids and equipment as a new system of benefits was being introduced that limited payments to only those below age 65. Although not personally affected by these new proposals, the researcher does share an interest in social justice and, as such, was challenged to remain impartial during those discussions.
that revealed flaws in the system designed to provide a safety net for more vulnerable populations and the potential for greater marginalisation of older adults with disabilities in the future.

It was important therefore that the researcher make attempts wherever possible to remain as unbiased and impartial as possible. Reflexive journalling enabled the researcher to effectively review experiences and biases. Reflexivity promotes awareness and enhances understanding of researcher held subjectivities (Hall & Stevens, 1991). By remaining mindful of the discussions and internal biases, the researcher made a conscious effort to always seek clarification on ambiguous points directly from participants rather than assigning one’s own meaning to what was being said. This helped to reduce the risk of knowledge distortion. Furthermore, in the reporting the findings of the study, the researcher used participants’ quotes to demonstrate how the data and findings are clearly linked. Additionally, the researcher sought feedback from supervisors throughout the process, ensuring that not only were the analytic processes appropriate, but also that the interpretation was coherent. Once the findings were complete, feedback was also sought from participants and other ‘insider’ observers to check the validity of the findings.

The training that the researcher had previously received as a provisional psychologist also greatly assisted in terms of interview skills, as well as helping the researcher minimise the power differential between the researcher and participants. At all times the researcher was clear that they were interested in learning about the participant’s experiences. By demonstrating genuine curiosity, impartiality and active listening the researcher was able to quickly establish rapport and participants appeared to engage in open dialogue, resulting in the generation of a greater depth of data than would otherwise be obtained. Certainly the researcher was surprised at the willingness
and openness of participants both male and female to share personal and at times sensitive information given their outsider status. For example, a number of participants shared stories of traumatic experiences or losses that continue to affect them even years after the event. In all instances although expressing empathy, the researcher was careful to not slip into therapist or counsellor mode despite the obvious distress of the participant. In anticipation of the possible sensitivity of the topic for participants, the researcher had prepared, prior to data collection, a debriefing statement that included information on referral pathways that participants could follow to access assistance.

Finally, it is important to acknowledge that participants shared their views and experiences with the researcher via face-to-face interviews, usually in a participant’s home or office. Researchers, Elwood and Martin (2000) argue that the social spaces that individuals operate within have an important role to play in qualitative research, providing new insights with respect to research questions and helping researchers understand and interpret interview materials. The researcher considered it a privilege in every instance to be invited into a person’s life and/or home, and was overwhelmed by how welcoming participants were, with many providing tours of their premises, and sharing insights into hobbies and interests that extended beyond the interviews. Over the course of the interviews the researcher developed not only a greater appreciation of the experience of ageing with a disability, but also a deeper admiration for the participants themselves.

Limitations

There are also some limitations to this work. First, participants were recruited through non-random sampling methods, and so may not capture the full diversity of the population. In particular, the domains that emerged from this study may not be relevant to those who had not adapted to their disabilities as well, were in poor health, or were
more isolated, and unable or unwilling to participate in the research. Efforts were however made to target a diversity of experiences by purposefully recruiting from two different types of disability group; those ageing with a progressive disability (PPS) and those ageing with a disability that progresses in a more stepwise manner (SCI).

Secondly, it should be noted that all participants lived within a 200km distance of Melbourne, Australia. Given the emerging role that wider social and political systems appear to play in successful ageing, it might be suggested that the narrow geographical distribution of our participant group may not be fully representative of the wider range of different disability experiences and influences. However, while this may be a small area geographically, it should be noted that it included a diversity of urban, suburban and rural areas.

Thirdly, while two groups of older adults ageing with a disability were recruited to this study; in general, the progressive disability (post-polio) group were significantly older, were less ethnically diverse and comprised a majority of female participants relative to the SCI group. The SCI group who were recruited to represent individuals who acquire a sudden, often traumatic disability at a young age, were younger and comprised mostly male participants. Despite the demographic differences between the groups however, the parallels in terms of participants’ responses revealed that the experience of ageing with a disability was similar for both groups.

Conclusions and recommendations for Study Two

Participants described successful ageing with a disability in terms of eight different domains: 1) looking after physical health; 2) retaining cognitive abilities; 3) positive psychological resources; 4) retaining a sense of independence and autonomy; 5) social engagement and participation in community; 6) retaining a sense of purpose; 7) fairness, respect and recognition; and 8) safety and security. The proposed preliminary
model (see Figure 4, p. 132) adds two new dimensions – *fairness and respect* and *safety and security* to existing models of successful ageing (Cosco, Prina, Perales, Stephan, & Brayne, 2014), as well as an additional supporting layer that depicts the impact socio-political and economic influences can have on an individual’s ability to age successfully with a disability. Furthermore, it is suggested that rather than being a hierarchy as suggested by earlier studies with older adults ageing without a disability, successful ageing with a disability may be better captured by the concept of a wheel (as shown in Figure 4), where each spoke supports an individual to age successful while being surrounded by appropriate political, social and community resources.

With this in mind, it is important to recognise that most older adults will acquire some level of disability during their lives, albeit possibly later and for a shorter period than previous generations (Cutler, Ghosh, Landrum, McFadden, & Xie, 2014; Fries, Bruce, & Chakravarty, 2011). Indeed, people in general, many of whom are likely to develop adult-onset age-related disabilities, are also living longer than ever before (Bishop & Hobson, 2012). It is therefore not a question of ‘if’, but ‘how’ they will live with accumulating age-related disabilities (Cox & Parsons, 1993). For many older adults the potential that they could develop functional impairments and chronic conditions as they age can be unsettling and anxiety-provoking (Neupert & Bellingtier, 2017). After all, this is a generation for whom, even if polio did not directly affect them, were certainly aware of the images of children in iron lungs and strapped into Double Thomases. In fact, it was this generation’s attitudes about the “handicapped” that formed the basis for many of the examples in Goffman’s (1963) classic work on stigma and “spoiled identity.”

It is important therefore to develop a model of ageing successfully that focuses not only on the losses experienced in older age, but also on the complexity of gains that may
also be the hallmark of acquired wisdom. After all, the notion that disability may in fact have some positive consequences and that the negative ones can often be managed, as suggested by Study One findings, has not yet been fully accepted in the field of gerontology (e.g., Rowe & Kahn, 1997), let alone by the population at large. It may be true to suggest that the point in life at which a disability manifests itself for most individuals is often viewed with no small amount of dread (Brody & Morrison 1992).

While a significant body of research has explored the meaning of successful ageing discourses from the perspective of older adults (Pruchno, Wilson-Genderson, & Cartwright, 2010; Strawbridge, Wallhagen, & Cohen, 2002), little investigation has been carried out to explore the perspectives of older adults ageing with a disability. Yet, some researchers have suggested that increasing age could actually act as a social leveller – with early-onset disability, rather than being a disadvantage – providing the impetus to develop robust coping and adaption skills to better manage the physical decline and functional changes associated with ageing; skills that perhaps those ageing without disabilities may struggle to develop (Bishop & Hodson, 2012). To date, however, collaboration between the disability and gerontology sectors has been at best sporadic, despite, as this study has found, a number of overlapping concerns including availability of suitable housing, appropriate healthcare, access to services, and financial support (Sheets, 2005). Within social gerontology, there has been limited exploration of the experiences and issues surrounding ageing and disability, albeit with a few noteworthy exceptions (Kennedy & Minkler, 1998; McGrath, Rudman, Polgar, Spafford, & Trentham, 2016; Minkler & Fadem, 2002; Molton & Yorkston, 2017, Priestley & Rabiee, 2002; Putnam, 2002; Raymond, Grenier, & Hanley, 2014). Similarly, disability studies have tended to overlook the impact of ageing on the disability process (Jonson & Larsson, 2009; Priestley & Rabiee, 2002). Moreover, successful ageing discourses themselves have been criticised for obscuring issues of disability, and equating disability
with infirmity and dependence (Rudman, 2015). Thus Study Two will aim to build upon the findings of Study One, and seek to effectively bridge some of the gaps between the gerontology and disability traditions, to increase overall understanding by examining the perceptions of people ageing with disabilities, as well as those ageing without disabilities. In this manner it is hoped to determine where overlaps lie and perhaps develop future opportunities for integrated research that can inform more inclusive interventions and policies so that a greater number of older adults can age well. Consequently, it is only through understanding the factors that influence people’s perceptions of what it is like to grow older with a disability can we seek to effectively link these two sectors, understand the true needs of the wider ageing population, and deliver services effectively.
CHAPTER 8: INTRODUCTION TO STUDY TWO

This chapter builds upon the findings of Study One. The current literature on the factors identified in Study One as important for ageing well with a disability is briefly summarized and reviewed as it relates to Study Two and finally hypotheses are presented for investigation. Chapter 9 subsequently details the methods and procedures employed in Study Two along with the results, while Chapter 10 will discuss the findings from Study Two. Chapter 11 will then consider how these findings may translate into a new, more inclusive model of successful ageing that may be as equally applicable to those ageing with or without a disability.

As previously discussed, Study One found that contrary to many of the assertions made in much of the successful ageing literature to date, it is indeed possible for individuals with a long-term disability to perceive themselves to be ageing successfully. Moreover, participants in Study One clearly saw ageing successfully as being able to maintain a balance across multiple interacting domains whilst also retaining an awareness of the limitations of an ageing body. Study Two, will therefore aim to examine self-rated successful ageing among a diverse range of individuals ageing with and without a disability. It aims to test the extent to which the themes that emerged from Study One accurately capture the factors that contribute to an individual’s sense of ageing successfully, irrespective of disability status. Finally, as Study One suggested that resilience, attitudes to ageing, autonomy, fairness and respect and purpose in life may all contribute to successful ageing, each of these factors are considered in more detail below.
Constructs to be measured in Study Two

Physical health

It is worth noting that although much of the successful ageing research to date has found objective measures of physical health to be the most influential aspect of ageing success (Cosco, Prina, Perales, Stephan, & Brayne, 2014; Deppe and Jeste, 2006). Study One demonstrated that many other factors influence perceptions of successful ageing (Strawbridge, Wallhagen, & Cohen, 2002; Westerhof, Miche, Brothers, Barrett, Diehl et al., 2014). As participants in Study One discussed, although still very important from both objective and subjective standpoints, physical health is possibly not the main reason for perceiving ageing success during older ages (Paúl, Teixeira, & Ribeiro, 2015). Study Two will therefore aim to examine the influence of both physical and mental health on ageing successfully using the SF-12v2® Health Survey (SF-12), a standardised self-report measure that measures the impact of physical and emotional difficulties on everyday functioning.

Resilience

The importance of positive psychological resources on successful ageing and in particular resilience will be tested in Study Two. Participants revealed that the ability to maintain a high quality of living often involved conscious adaptation and coping skills. Gattuso (2003) and Harris (2008) suggest that the concept of resilience may be appropriate for understanding how older people can adapt to potentially declining health and still achieve a sense of ageing successfully. Support for this argument was consistently found in Study One, with participants frequently noting the importance of persistence and adapting mindsets and behaviours, to ensure that they could continue to pursue the activities they valued despite pain and fatigue. It is for this reason that Study
Two will aim to examine the role of resilience in successful ageing using the Connor-Davidson Resilience Scale.

**Autonomy**

The term autonomy itself describes the ability to exercise free will, make one’s own decisions, and maintain control over one’s life, over and above external influences (Ryff, 2014; Ryff & Keyes, 1995). Importantly the fundamental need to retain one’s self-authority exists even in the face of disability and need for care (e.g. Baltes, 1996; Molton & Yorkston). Autonomy can often be challenged as one ages and functional impairments increase (Fortin et al., 2006, 2004), yet the right to self-determination and autonomy is seen as core right and a goal for all people (Duner & Nordström, 2005; United Nations, 2013). In light of the findings of Study One, Study Two will also examine the role that autonomy plays in assisting older adults age successfully. In order to do this, the Ryff Autonomy subscale and the MIDI Constraints and Mastery subscales will be used, further information relating to these measures is provided in the measures section in Chapter 9.

**Fairness and respect**

Participants in Study One noted that the way they were treated by others often directly impacted on their sense of self-worth and identity. Study two will aim to build upon this research, examining whether older adults who are ageing successfully with a disability are more likely to endorse measures related to procedural and anticipatory injustice. Previous studies demonstrate the important role that justice perceptions play in organisations (Shapiro & Kirkman, 1999). Empirical research suggests that being a member of a stigmatised group, such as those with a disability may impact individuals considerably, perhaps even altering their personalities permanently (Crocker, Major, & Steele, 1998). Studies suggest that from an early age, minorities are likely to experience
a pervasive pattern of discrimination and learn to accept a disadvantaged status (Davidson & Friedman, 1998; Evans and Herr, 1994). It is argued that this experience of discrimination may influence the development of a negative framework of cognitive heuristics relating to justice beliefs that can then be used to inform expectations regarding the justice of future events (Solomon, 1998). Anticipatory injustice (AI), as it is termed, was developed as a means of capturing negative expectations regarding future behaviour, such that subsequent perceived injustice is expected, either with or without experienced injustice (Shapiro & Kirkman, 2001). The authors argue that AI biases one’s perceptions so that unfair behaviour is expected and is more likely to be seen whether or not it occurs. Indeed AI is theorised to influence perceptions of the likely unfairness of future outcomes, procedures and interpersonal treatment (Shapiro & Kirkman, 2001).

**Sense of purpose**

In Study One, many participants discussed finding and retaining a sense of purpose as important to ageing successfully with a disability. In a longitudinal study to examine the relationship between purpose in life and the development of adult-onset disabilities, Boyle, Buchman, and Bennett (2010a) postulated that purpose in life may have important prognostic implications for health in old age. Their research conducted with a sample of 856 residents ageing without disabilities from the Chicago metropolitan area, found that those who reported lower levels of purpose in life were almost twice as likely to become disabled over a mean follow-up period of 4.7 years. Using the same cohort of participants, the links between purpose in life and Alzheimer’s disease were also explored, (Boyle, Buchman, Barnes, & Bennett, 2010b). Again the authors found a substantially reduced risk of developing the disease for those who rated highly on purpose in life. A higher sense of purpose has also associated with better self-rated
health and more activity engagement among cardiac patients (Holahan, Holahan, & Suzuki, 2008) and with better mental health in a predominantly older sample of people with rheumatoid arthritis (Verduin et al., 2008). Taken together these findings suggest that retaining a sense of purpose may serve an important protective role, and reduce the impact of age-related declines.

That notwithstanding, when considered in the context of Selective Optimisation with Compensation theory (Baltes & Baltes, 1990: see Chapter 3 for overview), it may be hypothesised that perhaps individuals with a high sense of purpose are relatively better equipped to select goals (selectivity) and manage the processes around goal attainment (optimisation), and adapt (compensation) to developmental challenges than those with a lower sense of purpose. After all, maintaining a sense of purpose in life is typified by the selection of meaningful goals, the optimisation of resources to be able to achieve these goals, and the development of compensation strategies to be able to persist when circumstances change. Furthermore, McKnight and Kashdan (2009) argue that purpose may act as a stress buffer, enhancing health and wellbeing and building resilience. Support for this hypothesis may be found in research conducted by the McArthur study of successful ageing. This study suggests a sense of usefulness may exert a protective effect on disability and mortality at a 7-year follow-up (Gruenewald, et al., 2007). Taken together it is posited that a higher sense of purpose is related to better health and well-being outcomes and longevity. However, we are not aware of research to date that has examined associations of purpose in life and ageing successfully for those ageing with a disability. Study Two will therefore aim to expand upon the current literature in these important areas.
Attitudes to ageing

As noted in Chapter 4, individuals ageing with a disability have been consistently found to begin to experience age-related functional declines approximately 15 to 20 years prior to their non-disabled peers (Kemp & Mosqueda, 2004). These declines are also potentially compounded by the speed at which they occur for some individuals (Campbell, Sheets, & Strong, 1999; Groah et al., 2012; Zarb & Oliver, 1994). The term “accelerated ageing” (Campbell et al., 1999, p. 114) was developed to describe this pattern of accumulating functional limitations often experienced by individuals ageing with disabilities, such as those with a spinal cord injury or post-polio syndrome. In a cross-sectional study of 4,593 community dwelling older people across 20 mostly Westernised countries, participants who were dissatisfied with their health were found to hold more negative attitudes toward their own ageing in terms of physical change (Low, Molzahn, & Schopflocher, 2013). Additionally, a small but significant relationship was also found between negative health satisfaction and greater psychological growth. The authors posited that lower health satisfaction was potentially an impetus for older adults to explore opportunities for psychological growth. Likewise, Brothers, Miche, Wahl, and Diehl (2015) found that holding more positive attitudes towards one’s own ageing predicted the perception of positive age-related changes (i.e. psychological growth), in a study of 819 relatively healthy community-dwelling adults aged 40 to 98 from the United States and Germany. These attitudes were also associated with better functional health and increased satisfaction with life.

In other research, holding a more negative attitude towards one’s own ageing has also been found to heighten awareness of negative age-related changes, and predict poorer functional health and lower satisfaction with life (Brothers, Miche, Wahl, & Diehl, 2015). The finding that age-related losses exerted a stronger mediating effect on
both physical health functioning and satisfaction with life relative to age-related gains was consistent with previous research which has found that more negative attitudes to ageing tend to exert a stronger influence on behavioural outcomes (e.g. failure to engage in preventative health measures) than positive ratings of subjective ageing (Levy & Myers, 2004; Sarkisian, Prohaska, Wong, Hirsch, & Mangoine, 2005).

Significantly for this study, it appears that to date there is limited research into how attitudes to ageing interact with ageing with a disability. Certainly in the studies to date, which typically examine attitudes to ageing for those ageing without a disability or with adult-onset disabilities, it may be suggested that participants are influenced by stereotypes that suggest that ageing is a time of disability and decline. However, age-related disabilities often manifest somewhat differently to early-onset disabilities, which are typically associated with a traumatic incident or condition that leads to sudden-onset impairment. Adult-onset age-related disabilities for example, are generally associated with a gradual loss of functioning and energy, as physical issues – often affecting different parts of the body – begin to manifest (Lewis 1989). While this scenario may be driving negative stereotypes about ageing for those without long-term disabilities, little is understood about how those with long-term disabilities view ageing. In a single longitudinal research conducted with a sample of 503 women aged 28 to 80 years who had a diagnosis of multiple sclerosis, found that higher levels of functional limitations were associated with more negative views of ageing (Harrison, Blozis, & Stuifbergen, 2008). Importantly the study also demonstrated that perceptions of ageing were influenced not only by the amount of limitation in functioning, but also by how fast functions declined. The authors argued that this may indicate that with faster declines in functioning, individuals may have had less time to adjust to their changing bodies, making their attitude towards ageing worse (Harrison et al., 2008). Study Two will attempt to tease out the impact of attitudes to ageing on the experience of ageing with a
disability versus without a disability using the Short-form Attitudes to Ageing Questionnaire.

**Study Two hypotheses**

Study Two seeks to evaluate the relevance of the model proposed in Study One with a broader cross-section of individuals ageing with a disability as well as with those ageing without a disability in order to elucidate any similarities or differences. Adopting a multifaceted perspective by considering insights from disciplines such as medicine, rehabilitation, psychology, and sociology will not only result in more comprehensive and inclusive models of successful ageing, but will also aim to improve interventions too assist more individuals age successfully. Based on findings from Study One and previous literature into perceptions of SA in other populations, the following hypotheses were tested in Study Two.

**Hypothesis 1 – Subjective ratings of successful ageing**

It is hypothesised that participants ageing with a disability will record a lower mean value for subjective sense of ageing success relative to those participants ageing without a disability.

**Hypothesis 2 – Domains of successful ageing**

2a) It is hypothesised that the domains (factors) identified in Study One will be considered important to ageing well both with and without a disability.

2b) It is hypothesised that the weightings or rank order of the domains (factors) identified in Study One and tested in Study Two will differ by group (i.e., for those ageing with, versus without a disability).
Hypothesis 3 – The impact of health

It is hypothesised that the higher the number of health conditions reported and more impactful they are on physical and mental functioning as assessed by the SF-12, the less likely participants are to consider themselves to be ageing successfully.

Hypothesis 4 – The role of income and housing situation

It is hypothesised that income levels and the security of housing will contribute significant variance to successful ageing scores.

Hypothesis 5 – Resilience

It is also hypothesised that as older adults with disabilities are likely to have had to overcome accumulating adversity over time, the strength of the relationship between resilience and successful ageing will be stronger in those ageing with a disability relative to those ageing without.

Hypothesis 6 – Fairness and respect

Based on previous research the following two hypotheses will be tested in Study Two:

a) It is hypothesised that participants with great expectations of injustice will have lower scores on mental health measures of the SF-12.

b) It is hypothesised that the activation of injustice concepts will significantly predict lower ratings of successful ageing across both groups, and that individuals ageing with a disability will be more likely to endorse concerns about future treatment, rating higher on measures of anticipatory injustice and lower on procedural justice relative to those ageing without a disability.
Hypothesis 7 – Autonomy

It is hypothesised that the activation of injustice concepts will significantly predict lower ratings of successful ageing across both groups, and that individuals ageing with a disability will be more likely to endorse concerns about future treatment, rating higher on measures of anticipatory injustice and lower on procedural justice relative to those ageing without a disability.

Hypothesis 8 – Attitudes to Ageing

a) It is hypothesised that participants with higher physical health scores will have more positive attitudes to ageing.

b) It is hypothesised that scores on AAQ-psychological growth and AAQ-physical change will be positively related to ageing successful with a disability, and will contribute unique variance to self-reported successful ageing for those ageing with a disability.

Hypothesis 9 - Sense of Purpose

a) It is hypothesised that higher sense of purpose as measured by the Ryff purpose in life subscale scores will contribute unique variance to self-reported successful ageing for participants ageing with and without a disability.

b) It is also hypothesised that participants ageing with a disability with a high sense of purpose will report lower levels of physical health problems.

Hypothesis 10 – Model of Successful Ageing

Finally, the preliminary model of successful ageing (see Figure 4, p. 132) as outlined in Study One will be tested. It is hypothesised that the model will explain a significant portion of the variance in successful ageing scores for participants ageing both with and without a disability.
CHAPTER 9: STUDY TWO

This chapter provides a detailed description of Study Two. The first section details Study Two’s methodology, including the research design, aims, participants, ethical considerations, materials, measures, procedures, trustworthiness considerations, and limitations. The results of the analysis are provided in the second section.

Study design

Participants completed an online questionnaire that measured a range of variables including those related to physical and mental health, resilience, attitudes to ageing, sense of purpose in life, autonomy and justice. Quantitative research methods including a series of hierarchical multiple regression analyses and bilateral correlations were used to test the influence and predictive capabilities, if any, of variables relating to the factors identified as important for successful ageing in Study One.

Study aims

This study examined between group differences for those ageing with and without a disability in order to test the extent to which the preliminary model (developed in Study One) accurately captures what people ageing with and without disabilities consider successful ageing to be. The study also aimed to elucidate the factors associated with self-rated successful ageing in those ageing with and without a disability and determine what, if any, differences there are in the domains and self-ratings of successful ageing between the two populations.
Ethics

This study adhered to the guidelines and policies of the University of Melbourne Human Research Ethics Committee (UMHREC) and the ethical guidelines of the Australian Psychological Association (2007) regarding protection of human participants. Approval was received from UMHREC prior to recruitment. A copy of the ethics approval letter is included as Appendix G). To protect confidentiality of participants, no information that could be used to identify participants was collected. In order to reduce the risk of participants suffering discomfort associated with sitting and using electronic equipment for an extended period of time, the survey instrument was also designed to be completed in under 30 minutes.

Participants

Participants were recruited using Amazon’s Mechanical Turk (MTurk). Amazon’s MTurk platform is an online crowdsourcing service, established to facilitate projects requiring human intelligence and is gaining popularity for survey completion, having been extensively validated for use in cognitive science research studies (Stewart, Chandler, & Paolacci, 2017), personality and social psychology (Buhrmester, Kwang, & Gosling, 2011) and clinical sciences (Shapiro, Chandler, & Mueller, 2013). MTurk workers are not selected purposefully, and as such they represent a diverse convenience sample. That being said, MTurk workers tend to be based predominantly in the United States or India (Ross, Zaldivar, Irani, & Tomlinson, 2010; MTurk Tracker website, December 27 2017). As such, the geographic distribution of workers online at any one time varies in accordance with which time zone is active and online when the HIT is posted. For example, 8 a.m. UTC (Coordinated Universal Time) is 1 a.m. Pacific Daylight Time or 1.30 p.m. in Mumbai India. Thus, at this time there is much higher number of workers from India, whereas between 8-10 p.m. UTC, the ratio is reversed.
and more workers from the United States are active. MTurk was used to target and recruit two groups of participants for participation in this research: the first group comprised individuals ageing with physical disabilities aged 50 and above, whilst the second group comprised adults aged 50 and over ageing without a disability. The minimum age for participants recognises that individuals with a long-standing physical disability experience the effects of ageing approximately 15-20 years earlier than able-bodied individuals (Kemp & Mosqueda, 2004). The age ranges above are also representative of previous research studies in this area. For example, Molton & Yorkston (2017) adopted a qualitative approach using nine focus groups to interview 49 middle-aged and older adults as one of the first studies to explore ageing with a disability. The ages of participants in their study ranged from 45 - 80 years (Mean Age = 62). Similarly, Raymond, Grenier, and Hanley (2014) undertook research examining facilitators of community engagement among older Canadian adults who were ageing with a disability. Participants in this study ranged in ages from 56 to 72 (Raymond et al., 2014).

Participants with physical disabilities were asked to self-identify their primary diagnosis by choosing from a given list of eight disabilities that feature prominently within the disability literature (e.g., Alschuler, Jensen, & Ehde, 2012; Krause, 2009; Molton & Yorkston, 2017; Raymond, Grenier, & Hanley, 2014). The list of disabilities specifically targeted were: Spinal Cord Injury; Post-polio syndrome; Multiple Sclerosis; Motor Neurone Disease; Epilepsy; Type I Diabetes; Hearing or Vision Loss; Cerebral Palsy. Participants were also able to select ‘other’ if their disability was not represented in this list. Although not an exhaustive list, it was anticipated that the conditions selected above would provide an adequate cross-section of individuals with different experiences who would be able to contribute to the research. Furthermore, it was expected that should differences be found between those ageing with and without a disability, that the
inclusion of such a broad cross-section of disabilities would allow for the broader generalisation of results.

Individuals with a diagnosed cognitive impairment or intellectual disability that could affect their capacity to consent and/or their decision-making ability not eligible for the study. This was set out in the Plain Language Statement (see Appendix I) and Consent Form (See Appendix J), that participants confirmed they had viewed, read and understood prior to completing the survey. This exclusion was considered necessary to protect more vulnerable populations from perceived coercion and to minimise the potential for distress. Participants were also excluded from the study if they did not meet the age inclusion criteria above or chose to withdraw from the study before completing the whole survey.

GPower 3.1 software was used to calculate the required sample size for each group. Specifying a multiple regression analysis with a power of 80% and an alpha error of 5%, and assuming equal variances, it was calculated that a sample of at least 110 participants per group was necessary to detect differences between groups.

Materials

The online questionnaire was divided into 11 sections (see Appendix K for a copy of the instrument). The first introductory section oriented potential participants to the purpose and nature of the study, included copies of the Plain Language Statement and Consent Form (see Appendices I and J) and screened potential participants to ensure they were eligible for the study. Section A comprised a single response item used to assess each participant’s perceptions of his or her own ageing success. Participants were asked to state their level of agreement or disagreement on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) in relation to the following statement “I am ageing successfully (or well)”. Section B assessed how important participants felt the
following factors (derived from the domains identified as important in Study One) were to ageing successfully: absence of physical health problems; absence of dementia; having sufficient income to meet needs; knowing that future housing needs are safe and secure; being treated with fairness and respect; resilience; maintaining a positive attitude; continued autonomy; social connections and a sense of purpose. Participants were asked to rate the importance of each using a Likert scale ranging from 1 (not at all important) to 5 (extremely important). Section C likewise asked participants to rate how satisfied they were on a scale from 1 (extremely dissatisfied) to 5 (extremely satisfied) with their own levels of: physical health; memory; income; housing; treatment from others; ability to deal with adversity; ability to stay positive; ability to make their own decisions; their social connections; and sense of purpose.

Subsequent sections used established measures to test the factors of interest. Section D used the 12-Item Short Form Health Survey (SF-12v2™) (Ware, Kosinski, & Keller, 1996) to address more specific matters related to physical health and wellbeing. Further details regarding this, and the following instruments are provided in the separate sections below. Section E comprised the 25-item self-rated Connor-Davidson Resilience questionnaire (CD-RISC) (Connor & Davidson, 2003). The items in Section F were adapted from items developed by Shapiro and Kirkman (1999), for their research related to whether participants felt that they were likely to be treated fairly in organisations. The questions asked participants to rate whether they felt that they were likely to be treated fairly and respectfully in the future by people and organisations with whom they had contact. Section G explored participants’ attitudes to ageing and utilised the Attitudes to Ageing – Short form questionnaire (AAQ-SF) developed by Laidlaw, Kishita, Shenkin, & Power (2018). Section H used Ryff’s (1989) psychological well-being measure which includes the Ryff Purpose in Life, Autonomy, Environmental Mastery, Social Relationships and Personal Growth subscales to measure participants’ current sense of
directedness, purpose in life, ability to form and execute their own decisions and quality of social relationships. Section I used the Control Beliefs scale from the Midlife in United States (MIDI) instrument (Lachman & Weaver, 1998a, 1998b) to assess participant’s subjective perceptions of how much control and autonomy they felt they have over day to day activities and decisions. Finally, Section J collected demographic information from participants.

**SF-12v2® Health Survey**

The SF-12v2® Health Survey (SF-12) (Ware, Kosinski, & Keller, 1996) is a 12 question, self-report, short-form assessment of physical and mental health functioning. It yields an eight-scale profile of functional health and well-being covering physical functioning (PF), role limitations due to physical health problems (RP), bodily pain (BP), general health (GH), vitality (energy/fatigue) (VF), social functioning (SF). It also assesses role limitations due to emotional health problems (RE), and mental health difficulties (MH) (e.g. psychological distress and psychological wellbeing). These scales in turn contribute to two psychometrically based physical and mental health summaries: the physical component summary (PCS) and the mental component summary (MCS), see Figure 5 for factor distribution.

The SF-12 uses self-assessed behavioural functioning across physical, social, and role activities to measure any limitations due to poor health and/or bodily pain. Items contributing to the PCS focus on observable and tangible actions to indicate a respondent’s current level of functioning. Questions include whether a respondent’s health has limited their typical day-to-day activities such as walking up a flight of stairs or vacuuming, and also whether their physical health during the preceding four weeks has led to them being able to accomplish less than they would like. In contrast, perceived well-being as measured by the MCS is more subjective and indicative of how an
individual feels (Ware, Kosinski, & Keller, 1996). Self-reported frequency and intensity of feeling states, including general mental health (psychological distress and psychological well-being), bodily pain, and energy levels all contribute unique variance to this component score.

A single general self-report response item was also included on the survey to evaluate the respondent’s perceived current health status. Higher scores on the SF-12 indicate higher levels of physical and mental health functioning. Research supports that such evaluations can provide accurate accounts of health status and reflect the impact of specific symptoms and other health states (Davies & Ware, 1981).

The SF-12 has shown good reliability and validity when used in general population samples, for instance with the test–retest reliability reported to be PCS = 0.85 and MCS = 0.67 and Cronbach α ratings of PCS = 0.92 and MCS = 0.88 (Maruish, 2012). It has also been validated for use in populations affected by health limitations, with a recent study reporting Cronbach α ratings of 0.85 and 0.83 for the PCS and MCS respectively when used in a population affected by diabetes (Kathe, Hayes, Bhandari, & Payakachat, 2018). Additional studies have evaluated the SF-12 in other populations.
with health limitations (Kontodimopoulos, Pappa, Niakis, & Tountas, 2007; Jayasinghe, Proudfoot, Barton, et al., 2009; Gandhi, Salmon, Zhao, et al. 2001; Hayes, Bhandari, Kathe, Payakachat, 2018) and found reliability and validity results similar to those reported by Ware, Kosinki, & Keller (1996) and Maruish (2012).

**Connor-Davidson Resilience questionnaire (CD-RISC)**

The Connor-Davidson Resilience (CD-RISC) Scale is a 25-item self-rating scale that asks respondents to consider how they typically respond to both day-to-day stresses and adverse events. The participant is asked to respond to each statement with reference to the previous month, understanding that if a particular situation has not arisen in that time, then the response should be determined by how they think they would have reacted. Items such as “Even when things look hopeless, I don’t give up” are rated on a scale ranging from 0 (not true at all) to 4 (true nearly all the time). Each item is designed to contribute unique variance to the construct of resilience. Thus respondents’ scores across all items are summed to provide an overall single resilience score. The overall single score can therefore range from 0 to 100, with higher scores reflecting greater resilience. Preliminary research by Connor and Davidson (2003) found that in a representative sample of the United States population (n = 577), a median score of 82 was achieved, with the lowest 25% of sample achieving scores between 0-73, 25-50% percentile scores falling within the 74 to 82 range, 50-75% percentile scores ranging from 83 to 90 and top quartile scores ranging from 91 to 100. The scale has subsequently been employed in a number of different populations, including general population surveys and in research assessing resilience in individuals with medical problems, see Table 3 below.
Table 3: Sample of mean (SD) CD-RISC 25-item scores in general population and medical samples

<table>
<thead>
<tr>
<th>Authors</th>
<th>Population</th>
<th>Number</th>
<th>Mean (SD)</th>
<th>Location</th>
<th>Reliability</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connor et al (2003)</td>
<td>General</td>
<td>458</td>
<td>80.4 (12.8)</td>
<td>USA</td>
<td>0.89</td>
<td>National random digit dial sample</td>
</tr>
<tr>
<td>Lamond et al (2008)</td>
<td>General</td>
<td>1,395</td>
<td>75.7 (13.0)</td>
<td>USA</td>
<td>0.92</td>
<td>Community sample over age 60</td>
</tr>
<tr>
<td>Zhong et al (2016)</td>
<td>General</td>
<td>214 Male</td>
<td>64.8 (13.8)</td>
<td>China</td>
<td>0.93</td>
<td>Elderly (&gt;60 years) community sample no mental illness or cognitive problems</td>
</tr>
<tr>
<td></td>
<td>215 Female</td>
<td></td>
<td>62.3 (15.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liu et al (2015)</td>
<td>General</td>
<td>2,062</td>
<td>71.4 (13.4)</td>
<td>Australia</td>
<td>0.92</td>
<td>Australian community cohort - age groups 48-52 and 68-72</td>
</tr>
<tr>
<td></td>
<td>1,826</td>
<td></td>
<td>73.4 (13.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Law et al (2014)</td>
<td>General</td>
<td>79</td>
<td>71.3 (10.8)</td>
<td>Australia</td>
<td>N/A</td>
<td>Centenarians</td>
</tr>
<tr>
<td>Connor et al (2003)</td>
<td>Clinical</td>
<td>139</td>
<td>71.8 (18.4)</td>
<td>USA</td>
<td>0.89</td>
<td>Primary care patients</td>
</tr>
<tr>
<td>Steinhardt et al (2009)</td>
<td>Clinical</td>
<td>16</td>
<td>83.1 (8.5)</td>
<td>USA</td>
<td>0.88</td>
<td>Patients with diabetes</td>
</tr>
<tr>
<td>White et al (2010)</td>
<td>Clinical</td>
<td>42</td>
<td>82.2 (9.4)</td>
<td>USA</td>
<td>N/A</td>
<td>Spinal cord injury</td>
</tr>
<tr>
<td>Senders et al (2014)</td>
<td>Clinical</td>
<td>117</td>
<td>73.4 (15.8)</td>
<td>USA</td>
<td>N/A</td>
<td>Multiple sclerosis</td>
</tr>
<tr>
<td>Cohen et al (2014)</td>
<td>Clinical</td>
<td>14</td>
<td>93 (82-93)</td>
<td>USA</td>
<td>N/A</td>
<td>Pre lung transplant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42</td>
<td>87 (76-95)</td>
<td></td>
<td></td>
<td>Post lung transplant</td>
</tr>
</tbody>
</table>

The CD-RISC is considered a reliable and valid instrument with test–retest reliability reported to be 0.87 (Connor & Davidson, 2003) and the Cronbach \( \alpha \) ratings ranging from 0.89 (Connor & Davidson, 2003) to 0.93 (Zhong et al., 2016), see Table 3 above for additional reliability ratings.

Attitudes to Ageing Short-form (AAQ-SF) questionnaire

The Attitudes to Ageing Short-form (AAQ-SF) questionnaire was used to capture participants’ attitudes to ageing (Laidlaw, Kishita, Shenkin, & Power, 2018). The AAQ-SF consists of 12 items which form a three-factor model representing psychosocial loss, physical change and psychological growth. Psychosocial loss includes
questions relating to whether participants associate old age with being depressed, lonely, disengaged from the community and with increasing difficulty meeting and making new friends. Respondents are also asked about the physical changes they have noted as they have aged. Questions contributing to this factor enquire about whether participants feel old, their current energy levels, perceived health status and exercise regularity and importance. The psychological growth factor reflects the use of adaption and coping skills as one ages, additionally it captures an individual’s level of self-acceptance. Psychological growth includes being able to recognise the positives of ageing, seeing age as a privilege, passing on wisdom and setting a good example to others. All items are based on self-reports with ratings ranging from 1 (strongly disagree or not at all true) to 5 (strongly agree or extremely true). The assessment time period is defined as how the responder currently feels. To date, research using the 12-item AAQ-SF is limited given its very recent development, however the survey authors reported adequate internal consistencies for their samples in testing: sample 1 (N = 2487), psychosocial loss $\alpha = .72$, physical change $\alpha = .72$, and psychological growth $\alpha = .62$; and sample 2 (N = 792), psychosocial loss $\alpha = .68$, physical change $\alpha = .73$, and psychological growth $\alpha = .61$.

**Ryff Psychological Wellbeing Scale**

Ryff’s Psychological Well-being Scales are designed to measure six theoretically motivated constructs of psychological well-being: autonomy – independence and self-determination; environmental mastery – the ability to manage one’s life; personal growth – being open to new experiences; positive relations with others – having satisfying high quality relationships; purpose in life – believing that one’s life is meaningful; and self-acceptance – a positive attitude towards oneself and one’s past life. For the purpose of this study only two of the Ryff subscales (assessing Purpose in Life,
and Autonomy) have been used as these map most closely onto the constructs we wish to measure.

**Purpose in Life subscale.**

The Purpose in Life sub-scale from Ryff’s (1989) psychological well-being measure was used as proxy measure to explore the influence retaining a sense of purpose may have on a person’s perceived ability to age successfully. It has a mix of positively (e.g., “I enjoy making plans for the future and working to make them a reality”) and negatively worded items (e.g., “My daily activities often seem trivial and unimportant to me”). Respondents indicate how accurately each statement describes them, using a 6-point scale anchored by 1 (strongly agree) and 6 (strongly disagree). High scores on the Purpose in Life scale suggest that the subject has clear goals and a sense of direction in life, while low scores suggest a lack of meaning in life and fewer goal-oriented behaviours (Ryff, 2014). Due to the necessity to keep the survey short, the shortened 9-items per scale version was used. This version is also currently being used in the ongoing Wisconsin Longitudinal Study. Research into the psychometric properties of the alternative version lengths suggest that this 9-item version has an internal consistency alpha of between .73 and .65 (van Dierendonck, 2004), with somewhat reduced alphas (α = .58) in a Spanish study conducted with older community dwelling adults, where a correlation was observed between lower incomes and less education and lower scores on this scale (Triado, Villar, Sole, & Celdran, 2007).

**Ryff Autonomy subscale.**

The Autonomy sub-scale from Ryff’s (1989) psychological well-being measure was used to examine the influence and predictive value that retaining a sense of autonomy may have on an individual’s sense of ageing well. Similar to the Purpose in Life subscale, it too has a mix of positively (e.g., “I have confidence in my opinions even
if they are contrary to the general consensus”) and negatively worded items (e.g., “It is difficult for me to voice my own opinions on controversial matters”). Respondents again indicate how accurately each statement describes them, using the same six-point scale described in the section above. High scores suggest that the subject is independent and self-directed, low scores in contrast suggest that the subject is overly concerned about the expectations of others and as such may rely on others to make important decisions (Ryff, 2014). Research into the psychometrics of the 9-item version of this subscale suggest that it has an internal consistency alpha of between .78 and .69 (van Dierendonck, 2004), although once again this figure was reduced to .63 in the Spanish study conducted by Triado, Villar, Sole, & Celdran (2007).

**Sense of Control scales from Midlife Development Inventory (MIDI)**

The Sense of Control scales comprise two dimensions: personal mastery and perceived constraints. The MIDI personal mastery scale comprises four questions that aim to uncover respondents’ sense of self-efficacy and effectiveness in carrying out goals (Lachman & Weaver, 1998a). Questions include: “I can do just about anything I really set my mind to,” and “What happens to me in the future mostly depends on me.” Respondents were asked to indicated the extent to which they felt each of the statements described them using a 7-point scale (1 = strongly agree, 7 = strongly disagree). Items were reverse scored, thus higher scores reflect a greater sense of personal mastery. Estimates of reliability (Cronbach alpha α = 0.70) were achieved in the initial development studies (Lachman & Weaver, 1998a; 1998b) suggesting that this measure is valid for use in this study.

The MIDI Perceived Constraints dimension was used to indicate the extent to which the respondent perceived there to be obstacles or external factors beyond their control that interfere with goal realisation. The scale uses eight questions, examples of
which include: “Other people determine most of what I can and cannot do,” and "There are many things that interfere with what I want to do”. Respondents were again asked to indicate the extent to which they felt each of the statements described them using a seven point Likert scale where 1 (strongly agree) and 7 (strongly disagree). Items were again reverse scored so that higher scores reflected greater perceived constraints. Estimates of reliability of the perceived constraints scales are reported to be acceptable (coefficient α = 0.86) (Lachman & Weaver, 1998a; 1998b).

**Anticipatory Distributory Justice and Procedural Justice questionnaire**
(adapted from Shapiro and Kirkman, 1999)

In order to measure the extent to which participants felt that they were, and would continue to be treated fairly by governments, organisations and the public, we asked a series of questions adapted from research examining the role of anticipatory and distributive injustice in an organisational change context (Shapiro & Kirkman, 1999). Based on the findings of Study One, it was felt that this approach most closely matched the statements and concerns raised by those participants. Estimates of reliability of the scales as reported by Shapiro and Kirkman (1999) were excellent (Procedural injustice α = 0.91; Anticipated distributive injustice α = 0.71 and future concerns α = 0.91). Similar to the earlier work by Shapiro & Kirkman, we split questions into three main areas, the first of which reflected anticipation of distributive injustice and asked respondents to indicate how concerned they were that they would be able to meet future financial, healthcare and housing needs. Thus as an example, one question asked respondents “How concerned are you that you will be given fair access to services such as healthcare to allow you to age successfully in the future”. Respondents were asked to rate their level of concern using a 5-point Likert scale (where 1 = Not at all concerned and 5 = Highly Concerned). The second section asked respondents to indicate how fairly
they felt people with backgrounds similar to themselves were treated by governments, policy makers, healthcare providers, businesses and society as a whole. As an example one question asked “*How fairly do you believe society treats people with a similar background to yourself?*”, again a Likert scale ranging from 1 (*not at all fairly*) to 5 (*always fairly*) was used to measure responses.

To assess respondents’ perceptions of procedural justice regarding the treatment they personally experience, four areas relating to government departments, healthcare providers, businesses and members of the public were explored. Four questions were asked under each section resulting in 16 items overall. Respondents were asked to indicate their agreement to the following statements when dealing with, for example, government departments; 1) Overall I am treated fairly by the people I meet; 2) Overall I feel that my feelings are taken into account by people I have dealings with; 3) Overall, I feel that my desires are heard and taken into account by the people I have dealings with; and 4) Overall the people I deal with are helpful and sincere. Respondents were again asked to rate their agreement on a 5-point Likert scale where 1 (*Strongly Disagree*) and 5 (*Strongly Agree*).

**Demographic and health information**

In addition to the formal measures listed above, information was also collected regarding participants’ age, gender, country of residence, income level, income source and housing situation. For both groups, participants were also asked to confirm if they have any of the following health conditions: Heart Disease; Stroke; Bronchitis; Cancer; Type II Diabetes; Asthma, Osteoporosis; Emphysema or Obesity. For participants in the group ageing with a disability, information was also collected on their primary diagnosis by asking participants to indicate which of nine predefined conditions they had been
diagnosed with (see Participants section p. 171). Participants with a condition other than those predefined were able to select ‘other’.

Procedure

Participants were invited to complete an online questionnaire via Amazon’s Mechanical Turk (MTurk) platform. The MTurk service is an online marketplace providing access to a diverse population of online workers and research participants, through the creation of Human Intelligence Tasks (HITs). A HIT represents a single, self-contained task that a worker can work on and complete in exchange for a small monetary payment. The use of MTurk for academic purposes originated in the computer sciences, where crowdsourcing was initially used to complete human intelligence tasks such as large-scale transcription and programming validation (Kittur, Chi, & Suh, 2008). Today, research using online labour markets such as MTurk has evolved to include short, cross-sectional surveys conducted either across the entire crowd population, or as is the case in this study, on a specific subpopulation (e.g. people aged 50 or over).

For this study two versions of the same survey instrument were created in the Qualtrics Experience Management Platform (www.qualtrics.com/research-core/). One survey captured data from those ageing with a disability (see Appendix K) and one captured data from those ageing without a disability. The surveys were subsequently linked to one of two Amazon MTurk HITs, one of which specifically asked for participants aged 50 or over with a physical disability, and the other that simply requested participants aged 50 or over (see Appendix H for examples). A remuneration figure of US$1.20 was offered to encourage participation. Based on observations of remuneration rates offered on other similar HITS being posted online during the period immediately prior to this research being conducted, it was judged that this rate would be sufficient, yet not too high so as to unduly influence participants or their results. To
ensure the MTurk links were working as anticipated, that data was being captured accurately and that the remuneration of US$1.20 per HIT was adequate to encourage people to participate, initial pilot tests were conducted targeting those ageing with a disability and those ageing without a disability. A total of ten HITS per group were posted via Amazon Mechanical Turk on 27th August 2017. This process enabled the refinement of the interview instrument prior to carrying out the full study, ensuring it was not too lengthy, and any limitations or weaknesses in the interview instrument were identified. The goal was also to identify any procedural problems that might occur, such as questions that participants were unlikely to complete. The pilot test was conducted successfully, with the remuneration level being sufficient to attract participants, and indeed all responses being received within 40 minutes of the HIT being posted online with an average completion time of 24 minutes and 11 seconds, suggesting that no modifications were necessary. Upon successful completion of the pilot study, the full study was launched.

The HITs relating to those who were ageing without a disability were posted first on Sunday 27th August 2017 at 6:57 p.m. Pacific Daylight Time: PDT, (Monday, 28th August 2017, 1:57 a.m. Coordinated Universal Time: UTC). An initial 160 HITs were offered, resulting in 141 valid participants being recruited, of whom 113 (80%) did not have a disability, while 28 (20%) reported having a physical disability. In total all HITs were completed in two hours with an average completion time of 21 minutes and 23 seconds.

The version of the survey that related to those ageing with a physical disability was launched on Monday 28th August 2017 at 12:15 a.m. PDT (Monday, 28th August, 2017, 7:15 a.m. UTC). The targeted number for this survey instrument was completed in under 2 hours, with an average duration of 15 minutes and 56 seconds. To take into
account the proportion of participants from the first survey who registered as having a physical disability, the number of available HITs was reduced to 125. Respondents who were aged under 50, or failed to provide their age were excluded from further analysis. In total 102 (81%) valid participants were recruited through this survey, bringing the total number of participants ageing with a disability to 130.

Prior to any data being collected, all participants received a copy of the Plain Language Statement and Consent Form (see Appendices I and J). These documents outlined the eligibility criteria for participation in the study, namely that participants were aged 50 or over, that they had a good level of English language and no diagnosed cognitive impairment that would impact their decision-making abilities. For those responding as having a physical disability in either survey, information was also requested on their primary diagnosis. The Consent Form and Plain Language Statement also provided information on the design, purpose of the study, and any potential negative consequences that could arise as a result of participation. Potential participants were also informed that participation was voluntary, and that they could withdraw their consent at any time. Participants confirmed that they had viewed, read, and understood the information provided in the Consent Form and were happy to proceed and participate in the study by selecting the ‘Yes’ button to confirm that they were aware of the purpose, nature and requirements of the study prior to the survey being presented. Once confirmed participants were presented with the survey instrument for completion. Following completion of the survey, debriefing information and a list of referrals to mental health agencies were provided (see Appendix L).

Initial analysis of respondents revealed that the mean age of the group ageing with a disability ($M = 56.39, SD = 6.26$) was not statistically different from those ageing without a disability ($M = 56.78, SD = 5.42$), $t(241) = .511, p > .05$, but the gender
distribution was skewed with a greater percentage of males represented in the group ageing with a disability, while the group ageing without a disability had a greater percentage of female participants $\chi^2 (1, 243) = 4.09, p < .05$. Moreover, the geographic distribution was unbalanced across the groups $\chi^2 (6, 243) = 96.512, p < .05$. As a result of the imbalance a second tranche of HITs were offered with the aim of addressing some of the variation in the survey variables. Both versions of the HITs were posted on 1st October 2017 at 5:29 p.m. PDT (2nd October 2017, at 12:29 a.m. UTC). An additional 105 HITs were offered to participants aged 50 or over ageing without a disability, while 60 new HITs were posted for individuals aged 50 or over ageing with a disability. In order to balance the geographical distribution, specific countries were targeted and excluded from these HITs. Once again the results were received within two hours for both groups, with an average completion time of 19 minutes and 29 seconds for group ageing without a disability and 22 minutes and 46 seconds for the group ageing with a disability. Participants who had already completed a survey in Tranche 1 of the study were excluded from being able to complete an additional survey in Tranche 2.

Table 4. Recruitment data

<table>
<thead>
<tr>
<th></th>
<th>Ageing with a disability</th>
<th>Ageing without a disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Tranche 1a</td>
<td>28</td>
<td>103</td>
</tr>
<tr>
<td>(target 160, 82% valid responses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tranche 1b</td>
<td>102</td>
<td>0</td>
</tr>
<tr>
<td>(target 125, 82% valid responses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tranche 2a</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>(target 105, 86% valid responses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tranche 2b</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>(target 60, 83% valid response)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>205</td>
<td>188</td>
</tr>
</tbody>
</table>

Note: Tranche 1 = first batch of HITs posted. Tranche 2 = second batch of HIT posted
An initial visual check of the data excluded individuals with large amounts (over 50%) of missing data or non-random, patterned responding (i.e., all responses recorded as the same score). In total an additional 75 eligible participants who were ageing without a disability and 75 eligible participants ageing with a disability were recruited via the second tranche of surveys; increasing the potential pool of participants for each group to 205 ageing with a disability and 188 ageing without a disability (overall $N = 393$). The gender distribution for the new participant pool comprised 248 males (63%), 143 females (36%) and two participants who preferred not to disclose their gender. The new breakdown of geographical locations is shown in Table 5 below.

Table 5. Geographical breakdown of participant location

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Ageing with a disability ($n=205$)</th>
<th>Ageing without a disability ($n=188$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>1 (0.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Asia</td>
<td>1 (0.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Canada</td>
<td>2 (1.0%)</td>
<td>2 (1.1%)</td>
</tr>
<tr>
<td>Chile</td>
<td>0 (0%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>India</td>
<td>100 (48.8%)</td>
<td>67 (35.6%)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0 (0%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>Kenya</td>
<td>1 (0.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Mexico</td>
<td>1 (0.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1 (0.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Philippines</td>
<td>0 (0.0%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0 (0.0%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>0 (0.0%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>UK</td>
<td>0 (0.0%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>USA</td>
<td>95 (46.3%)</td>
<td>113 (60.1%)</td>
</tr>
</tbody>
</table>
**Data cleaning**

The next stage involved a detailed data clean of the overall data pool. Frequencies, mean values and standard deviations were calculated for each variable to detect the presence of any outstanding missing data points. Participants (24) with more than 5% missing data (Tabachnick & Fidell, 2013), including those who had only partially completed the survey instrument, were excluded from further analysis. This decision was made as the number of complete cases available in each group remained significantly larger than the required sample size identified, and by removing the incomplete cases the risk of biasing the results was reduced (Tabachnick & Fidell, 2013). In order to assess whether data was missing at random, Little’s MCAR tests were calculated based on the missing variables for each subscale overall, \( \chi^2 (2588, 393) = 2434.633, p = .985 \) and for each group separately: those ageing with a disability \( \chi^2 (1632, 205) = 1572.599, p = .851 \); and those ageing without a disability \( \chi^2 (1355,188) = 1323.687, p = .724 \). The results confirmed that the data were missing at complete random.

Following this procedure, the data were split into those ageing with a disability and those ageing without a disability so that the populations could be analysed separately. Given the size of the datasets, and the limited quantity of missing values remaining, any additional missing values were replaced by the population mean of the variable in question and the data means were subsequently rechecked to ensure that this had not adversely affected the variance (Hair, Black, Babin, & Anderson, 2014, p.51). Following this, the composite scores for the scales were calculated as recommended in the survey instrument manuals.

The distribution of these scores was visually checked for excessive skew and kurtosis using SPSS generated histogram plots. Standardised z-scores were calculated
for each composite scale score. These were then sorted into descending order to identify any extreme univariate outliers as defined by a z-score of greater than plus or minus 3.29 (Tabachnick & Fidell, 2013). Among participants ageing with a disability only one outlier was identified on the anticipatory justice scale, this was converted to nearest non-outlier score (difference of one point) and the z-score was recalculated to ensure that no new outliers had emerged as a result (Tabachnick & Fidell, 2013). For those ageing without a disability, outliers were found in the Connor-Davidson Resilience Scale, the Ryff Autonomy, Environmental Mastery and Self-Acceptance subscales. Closer inspection, revealed that the outliers involved, occurred across only two participants (record IDs 247 and 255). The decision was made to delete both, as in addition to being outliers, more than 5 data points were missing from both cases suggesting that participants may not have responded accurately (Tabachnick & Fidell, 2013). Once these participants were removed the z-scores were recalculated to confirm that there were no further outliers. The data were also checked for multivariate outliers using Mahalanobis distance statistics, which showed no outliers, using a p-value cut-off of $p < .001$. Multicollinearity diagnostics were also calculated using linear regression and a variance inflation factor score cut-off of 3 (Hair, Black, Babin, & Anderson, 2014, pp. 200). Using this method, data and scale variables were found to be independent of each other. Furthermore, correlations across variables were all found to be within acceptable ranges suggesting that singularity was not a problem within the data.

Results

Demographic information

In total, 460 individuals completed the online survey between 27th August and 1st October 2017. Following cleaning, the final dataset contained 367 participants, 194 of whom identified as having a physical disability (ageing with a disability) (64.9% male),
and 173 of whom identified as not having a physical disability (ageing without a
disability) (63.0% male), see Table 6 below for details of the demographic information
pertaining to each group.

A t-test confirmed that the two groups did not differ in relation to mean ages
t(365) = 1.02, p > .05. Chi square analyses showed that the distributions of gender
χ² (2, 367) = 0.15, p > .05 and geographic location χ² (13, 367) = 19.68, p > .05 did not
differ between the two groups.

Table 6. Demographic Information relating to final participant pool

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Ageing with a disability (n=194)</th>
<th>Ageing without a disability (n=173)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean +/- SD</td>
<td>56.82 +/- 6.33</td>
<td>56.20 +/- 5.20</td>
</tr>
<tr>
<td>Range</td>
<td>50-92</td>
<td>50-72</td>
</tr>
<tr>
<td>Male %</td>
<td>64.9</td>
<td>63.0</td>
</tr>
<tr>
<td>Country of Residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>1 (0.5%)</td>
<td>0</td>
</tr>
<tr>
<td>Canada</td>
<td>2 (1.0%)</td>
<td>1 (1.2%)</td>
</tr>
<tr>
<td>Chile</td>
<td>0</td>
<td>1 (0.6%)</td>
</tr>
<tr>
<td>India</td>
<td>96 (49.5%)</td>
<td>62 (35.9%)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0</td>
<td>1 (0.6%)</td>
</tr>
<tr>
<td>Kenya</td>
<td>1 (0.5%)</td>
<td>0</td>
</tr>
<tr>
<td>Mexico</td>
<td>1 (0.5%)</td>
<td>0</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1 (0.5%)</td>
<td>0</td>
</tr>
<tr>
<td>Philippines</td>
<td>0</td>
<td>1 (0.6%)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0</td>
<td>1 (0.6%)</td>
</tr>
<tr>
<td>UK</td>
<td>0</td>
<td>1 (0.6%)</td>
</tr>
<tr>
<td>USA</td>
<td>90 (46.4%)</td>
<td>104 (60.1%)</td>
</tr>
</tbody>
</table>
Disability and illness information

As can be seen in Table 7 below, the most common disability reported by participants ageing with a disability was Type I diabetes, followed by hearing and vision loss. Participants from both groups were also asked about other medical conditions that might be associated with ageing. Table 8 below provides a breakdown of the other medical conditions endorsed for both groups.

Table 7. Frequency of disability types

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinal Cord Injury</td>
<td>30</td>
<td>15.6</td>
</tr>
<tr>
<td>Post-Polio Syndrome</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>14</td>
<td>7.3</td>
</tr>
<tr>
<td>MND</td>
<td>8</td>
<td>4.2</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>6</td>
<td>3.1</td>
</tr>
<tr>
<td>Type I Diabetes</td>
<td>51</td>
<td>26.6</td>
</tr>
<tr>
<td>Hearing or Vision Loss</td>
<td>50</td>
<td>26.0</td>
</tr>
<tr>
<td>Cerebral Palsy</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>13.0</td>
</tr>
</tbody>
</table>

Table 8. Other medical conditions endorsed

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Participants ageing with a disability (n = 194)</th>
<th>Participants ageing without a disability (n = 173)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease</td>
<td>117 (60.3)</td>
<td>79 (45.7)</td>
</tr>
<tr>
<td>Stroke</td>
<td>22 (11.3)</td>
<td>12 (6.9)</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>7 (3.6)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Cancer</td>
<td>1 (0.5)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Chronic asthma</td>
<td>1 (0.5)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>
Reliability of measures

Data was analysed using SPSS Version (SPSS 23.0). The following section provides information regarding the reliability of the measures used in this study, including the between group differences. Information regarding the overall Cronbach’s alpha levels for each scale are also summarised in Table 9.

**SF12v2.**

Physical Component Summary (PCS) and Mental Component Summary (MCS) scores were calculated using QualityMetric’s Health Outcomes™ Scoring Software, which is designed specifically to score SF™ health surveys. The software is licensed through QualityMetric/Optum. In the calculation of the MCS and PCS scores, each item makes a pre-specified weighted contribution to each score. The weights are based on and standardised according to the general population of the United States, with higher scores indicating better health status (Ware, Kosinski, & Keller, 1998). The Cronbach $\alpha$ ratings for this study were found to be PCS = 0.83 and MCS = 0.81 respectively, suggesting that the scale is reliable for use in this population.

**CD-RSIC-25.**

The Cronbach $\alpha$ ratings for this study was found to be 0.92 overall, with the individuals with a disability group recording a rating of 0.92 and those ageing without a disability achieving a rating of 0.91.

**AAQ-SF.**

Internal consistency reliability coefficients in this study, estimated by Cronbach’s alpha, were psychosocial loss overall $\alpha$ =0.81, with a $\alpha$ for those ageing with a disability being 0.80 and those ageing without a disability being 0.79; physical change overall $\alpha$ = 0.80 and $\alpha$ = .82 for those ageing with a disability and $\alpha$ = 0.75 for participants ageing
without a disability; finally $\alpha = 0.68$ was observed for psychological growth overall, as well as for each group separately.

Table 9. *Ranges, Means, Standard Deviations, and Reliabilities of Major Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Possible range</th>
<th>Obtained range</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF12v2 PCS</td>
<td>365</td>
<td>0-100</td>
<td>17.14-66.14</td>
<td>45.55</td>
<td>8.71</td>
<td>0.83</td>
</tr>
<tr>
<td>SF12v2 MCS</td>
<td>367</td>
<td>0-100</td>
<td>21.37-63.63</td>
<td>45.52</td>
<td>8.35</td>
<td>0.81</td>
</tr>
<tr>
<td>CD-RISC-25</td>
<td>366</td>
<td>0-100</td>
<td>24-98</td>
<td>66.90</td>
<td>14.46</td>
<td>0.92</td>
</tr>
<tr>
<td>AAQ- SF PL</td>
<td>367</td>
<td>4-20</td>
<td>4-20</td>
<td>12.12</td>
<td>3.60</td>
<td>0.81</td>
</tr>
<tr>
<td>AAQ- SF PC</td>
<td>367</td>
<td>4-20</td>
<td>5-20</td>
<td>13.63</td>
<td>3.34</td>
<td>0.80</td>
</tr>
<tr>
<td>AAQ- SF PG</td>
<td>367</td>
<td>4-20</td>
<td>8-20</td>
<td>14.72</td>
<td>2.55</td>
<td>0.68</td>
</tr>
<tr>
<td>Ryff PWB Scale overall</td>
<td>365</td>
<td>54-324</td>
<td>152-297</td>
<td>210.13</td>
<td>27.74</td>
<td>0.89</td>
</tr>
<tr>
<td>Ryff Autonomy</td>
<td>367</td>
<td>9-54</td>
<td>23-50</td>
<td>35.49</td>
<td>4.86</td>
<td>0.37</td>
</tr>
<tr>
<td>Ryff Purpose in Life</td>
<td>367</td>
<td>9-54</td>
<td>19-51</td>
<td>33.72</td>
<td>6.09</td>
<td>0.61</td>
</tr>
<tr>
<td>MIDI Personal Mastery</td>
<td>366</td>
<td>4-28</td>
<td>4-27</td>
<td>13.31</td>
<td>5.29</td>
<td>0.84</td>
</tr>
<tr>
<td>MIDI Constraints</td>
<td>367</td>
<td>8-56</td>
<td>8-56</td>
<td>33.43</td>
<td>10.36</td>
<td>0.89</td>
</tr>
<tr>
<td>Anticipatory Injustice - C</td>
<td>367</td>
<td>7-35</td>
<td>7-35</td>
<td>25.43</td>
<td>5.84</td>
<td>0.88</td>
</tr>
<tr>
<td>Anticipatory Injustice – F</td>
<td>367</td>
<td>4-20</td>
<td>4-20</td>
<td>10.47</td>
<td>3.02</td>
<td>0.78</td>
</tr>
<tr>
<td>Procedural Justice</td>
<td>356</td>
<td>16-80</td>
<td>16-80</td>
<td>59.71</td>
<td>10.36</td>
<td>0.92</td>
</tr>
</tbody>
</table>

Note: SF12v2 PCS (Physical Component Score); SF12v2 MCS (Mental Component Score); CD-RISC-25 (Connor-Davidson Resilience Scale); AAQ- SF PL (Attitudes to Ageing - Psychosocial Loss Subscale); AAQ- SF PC (Attitudes to Ageing – Physical Change Subscale); AAQ-SF PG (Attitudes to Ageing – Psychological Growth Subscale); Ryff PWB (Personal Wellbeing Scale); Ryff Autonomy (Personal Wellbeing Scale – Autonomy subscale); Ryff Purpose in Life (Ryff Personal Wellbeing Scale – Purpose in Life subscale); MIDI Personal Mastery (Midlife Development Inventory Personal Mastery Subscale); MIDI Constraints (Midlife Development Inventory Constraints Subscale); Anticipatory Injustice – Concerns; Anticipatory Injustice – Fairness.
Ryff Personal Wellbeing Scale overall.

The Cronbach $\alpha$ rating for the composite PWB scale overall was found to be 0.89, with the group ageing with a disability recording a rating of 0.92 and group ageing without a disability achieving a rating of 0.91.

Ryff Autonomy subscale.

The Cronbach’s $\alpha$ ratings for this study was found to be 0.37 overall, with the group ageing with a disability recording a rating of 0.45 and group ageing without a disability achieving a rating of 0.28. These values are significantly below the recommended .70 and less than the .83 obtained by Ryff (1989a, 1989b) using the 20-item-per-scale version and the .63 reported by Triado, Villar, Sole, & Celdran (2007) using the 9-item scale. The low rating associated with the scale in this study suggests that any results using this scale must be interpreted with caution.

Ryff Purpose in life subscale.

The Cronbach $\alpha$ ratings for this study was found to be 0.61 overall, with the group ageing with a disability recording a rating of 0.67 and the group ageing without a disability achieving a rating of 0.53. These values are below the recommended .70 and less than those obtained by Ryff (1989a, 1989b) using the 20-item-per-scale version. They are more similar to, though still slightly lower, than those obtained by Van Dierendonck (2005) using the 9-item scale.

Sense of Control scales from Midlife Development Inventory (MIDI).

Internal consistency reliability coefficients in this study, estimated by Cronbach’s alpha, were MIDI Mastery overall $\alpha = 0.84$, with alpha levels for those ageing with and without a disability $= 0.83$; MIDI Constraints overall $\alpha = 0.89$ and $\alpha = .88$ for those ageing with a disability and $\alpha = 0.90$ for those ageing without a disability.
Anticipatory Distributory Justice and Procedural Justice questionnaire.

The following Cronbach α ratings for this study were found: overall anticipatory injustice - concerns overall $\alpha = .88$, with the group ageing with a disability recording a rating of 0.85 and the group ageing without a disability achieving a rating of 0.90. Additionally, anticipatory injustice - fairness returned an overall reliability rating of $\alpha = .78$, with the group ageing with a disability recording a rating of 0.77 and the group ageing without a disability achieving a rating of 0.79. The Cronbach alpha score for Procedural Justice overall was $\alpha = .92$, with both groups recording $\alpha = .92$.

Tests of domain related variables.

In addition to the formal scales reported above, participants were also asked to rate how important they felt the following aspects were to ageing successfully: absence of physical health problems; absence of dementia; having sufficient income to meet needs; knowing that future housing needs are safe and secure; being treated with fairness and respect; resilience; maintaining a positive attitude; continued autonomy; social connections and a sense of purpose. Cronbach’s $\alpha$ was found to be 0.88 overall, with the group ageing with a disability recording a rating of 0.89 and the group ageing without a disability achieving a rating of 0.86. Mean score for this section was found to be 39.31, with a standard deviation of 6.74.

Participants were also asked to rate how satisfied they were on a Likert scale ranging from 1 (*extremely dissatisfied*) to 5 (*extremely satisfied*) with in their own levels of: physical health; memory; income; housing; treatment from others; ability to deal with adversity; ability to stay positive; ability to make their own decisions; their social connections; and sense of purpose. The Cronbach’s $\alpha$ coefficients for this section were found to be 0.84 overall, with those ageing with a disability recording an $\alpha$ coefficient of
0.84 and those ageing without a disability recording an $\alpha$ coefficient of 0.82. The overall mean score for this section was found to be 37.52, with a standard deviation of 6.39.

**Tests of control variables.**

Before testing our primary hypotheses, we tested whether any of the demographic variables (age, gender, and country of residence) and income level influenced the outcome variable, in this case the respondent’s ageing success score, as defined by the single item self-evaluation question. A regression analysis equation was conducted across the whole sample and the demographic details were entered simultaneously as predictors. Preliminary analyses were performed to ensure there was no violation of the assumptions of normality, linearity or multicollinearity. A weak but significant regression equation was found with an $R^2 = .036$ (Adj. $R^2 = .026), F (4, 360) = 3.407, p < .01). Of the variables entered only income level was found to be a significant predictor ($\beta = .177, t = 3.373, p < .01$). Thus, the more a participant considered their income to be sufficient or wholly sufficient for their needs the higher their perceived ageing success score was likely to be.

To see whether the pattern was the same for each group, an additional regression equation was calculated, with disability status used as a grouping variable. In this analysis, the demographic details were once again entered simultaneously as predictors. Preliminary analyses were performed to ensure there was no violation of the assumptions of normality, linearity or multicollinearity.

*Population ageing with a disability*

The model was found to be non-significant in the population ageing with a disability; $R^2 = .027$ (Adj. $R^2 = .006), F (4, 187) = 1.280, p > .05$, suggesting that neither
age, gender, country of residence nor income level significantly contributed to an individual’s rating of their ageing success.

Population ageing without a disability

The model was significant, but accounted for a relatively small amount of the variance in the outcome variable, $R^2 = .073$ (Adj. $R^2 = .051$), $F (4, 168) = 3.323, p < .05$). Both gender ($\beta = -.151, t = -2.010, p < .05$) and income level were found to be significant predictors ($\beta = .194, t = 2.592, p = <.05$). Thus, in this analysis, being male and having a higher income relative to ongoing needs accounted for approximately 7.3% of the variance in successful ageing scores among those participants ageing without a disability. Neither age nor country of residence significantly contributed to an individual’s rating of their ageing success.

Given these results, hierarchical multiple regression analyses were subsequently used to control for the impact of any demographic variables in those analyses assessing predictors of successful ageing.

Hypothesis 1 - Self-rated successful ageing

It is hypothesised that the group of participants ageing with a disability will record a lower mean value for subjective sense of ageing success relative to those participants ageing without a disability.

An independent $t$-test was conducted to determine if there were differences between mean ratings of successful ageing between the groups. Both groups were found to view their ageing success positively recording scores above the midpoint of the scale, however the mean score for the participants ageing with a disability ($M = 5.15, SD = 1.23$) was significantly lower than the mean score for those ageing without a disability ($M = 5.68, SD = .89$); $t (350) = -4.80, p < .001$. 

Hypothesis 2 – Ratings and rankings of the importance of aspects of successful ageing

2a) *It is hypothesised that the domains (factors) identified in Study One will be considered important to ageing well both with and without a disability.*

Independent t-tests (see Table 10) were conducted to determine if there were differences in ratings between those ageing with and without a disability on the domains identified as being important to facilitate successful ageing in Study One.

Table 10. *Results of independent sample t-tests comparing the importance variables in the two populations*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Population</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>t</th>
<th>p</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>Those ageing with a disability</td>
<td>3.98</td>
<td>.93</td>
<td>194</td>
<td>4.06</td>
<td>.94</td>
<td>173</td>
<td>-.86</td>
<td>.389</td>
<td>365</td>
</tr>
<tr>
<td>Purpose</td>
<td>Those ageing without a disability</td>
<td>3.94</td>
<td>.90</td>
<td>194</td>
<td>4.04</td>
<td>.90</td>
<td>173</td>
<td>-1.03</td>
<td>.302</td>
<td>365</td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td>3.93</td>
<td>.94</td>
<td>194</td>
<td>4.01</td>
<td>.99</td>
<td>173</td>
<td>-.72</td>
<td>.469</td>
<td>365</td>
</tr>
<tr>
<td>Positive attitude</td>
<td></td>
<td>3.91</td>
<td>1.07</td>
<td>194</td>
<td>4.20</td>
<td>.85</td>
<td>173</td>
<td>-2.83</td>
<td>.005**</td>
<td>361</td>
</tr>
<tr>
<td>Physical Health</td>
<td></td>
<td>3.85</td>
<td>.95</td>
<td>194</td>
<td>4.13</td>
<td>.88</td>
<td>173</td>
<td>-3.11</td>
<td>.002**</td>
<td>365</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td>3.84</td>
<td>1.04</td>
<td>194</td>
<td>4.02</td>
<td>1.01</td>
<td>173</td>
<td>-1.65</td>
<td>.100</td>
<td>365</td>
</tr>
<tr>
<td>Lack of dementia</td>
<td></td>
<td>3.82</td>
<td>1.09</td>
<td>194</td>
<td>4.16</td>
<td>.98</td>
<td>172</td>
<td>-3.14</td>
<td>.002**</td>
<td>364</td>
</tr>
<tr>
<td>Fairness</td>
<td></td>
<td>3.80</td>
<td>.99</td>
<td>194</td>
<td>4.01</td>
<td>.91</td>
<td>172</td>
<td>-2.03</td>
<td>.043*</td>
<td>363</td>
</tr>
<tr>
<td>Resilience</td>
<td></td>
<td>3.77</td>
<td>.97</td>
<td>194</td>
<td>3.86</td>
<td>.94</td>
<td>173</td>
<td>-.93</td>
<td>.353</td>
<td>365</td>
</tr>
<tr>
<td>Social networks</td>
<td></td>
<td>3.66</td>
<td>1.04</td>
<td>194</td>
<td>3.73</td>
<td>1.06</td>
<td>173</td>
<td>-.61</td>
<td>.542</td>
<td>365</td>
</tr>
</tbody>
</table>

*significant at <.05, ** significant at <.01,

Post hoc comparisons using a Bonferroni correction, with a p-value of .005 demonstrate that participants ageing without a disability valued the importance of maintaining a positive attitude, having no physical health problems, and not having
dementia more highly than those ageing with a disability (see Table 10). Being treated fairly by others was significant at the p<.05 level, but after correction the p-value was no longer significant. The level of importance ascribed to retaining autonomy, a sense of purpose, having access to adequate housing and income, remaining resilient and maintaining social networks were rated as equally important across both groups.

2b) It is hypothesised that the weightings or rank order of the domains (factors) identified in Study One and tested in Study Two will differ by group (e.g., for those ageing with, versus without a disability).

To compare the importance ascribed to the different domains by participants ageing with and without disabilities, the ranking of each variable was calculated. In a process similar to a Net Promoter Score calculation (Reichheld, 2003), the frequency of each score for a given variable was calculated using SPSS. Positive scores e.g. those where participants endorsed the variable as either 4 (Very Important) or 5 (Extremely Important) were summed and noted in Table 1 below as +n. Negative scores, as denoted by a score of 1 (not at all important) and noted as –n in Table 1 below, were subtracted from the positive figure. Scores of 2 (somewhat important) and 3 (moderately important) were considered passive responses. And as such, these were not included in the calculation. The remaining positive scores, after the deduction of the negative scores were then divided by the population total to reveal the percentage of positive scores overall. This figure was then used as the basis of the ranks detailed below in Table 11.

As Table 11 demonstrates, although all variables tested were considered important by the majority of participants, differences were observed in the relative importance (weightings) applied by the groups.
Table 11. *Rankings of the importance variables by subgroup (with top three rankings shown in red)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Participants ageing with a disability (n= 194)</th>
<th>Participants ageing without a disability (n = 173)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ n</td>
<td>- n</td>
</tr>
<tr>
<td>Physical health</td>
<td>139</td>
<td>1</td>
</tr>
<tr>
<td>Lack of dementia</td>
<td>115</td>
<td>5</td>
</tr>
<tr>
<td>Adequate Income</td>
<td>132</td>
<td>3</td>
</tr>
<tr>
<td>Secure housing</td>
<td>136</td>
<td>2</td>
</tr>
<tr>
<td>Fairness and respect</td>
<td>122</td>
<td>0</td>
</tr>
<tr>
<td>Resilience</td>
<td>122</td>
<td>3</td>
</tr>
<tr>
<td>Positive attitude</td>
<td>137</td>
<td>4</td>
</tr>
<tr>
<td>Autonomy</td>
<td>140</td>
<td>1</td>
</tr>
<tr>
<td>Social networks</td>
<td>121</td>
<td>4</td>
</tr>
<tr>
<td>Sense of Purpose</td>
<td>136</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: + n = number of participants rating the variable as very or extremely important; - n = number of participants rating the variable as not at all important
Hypothesis 3 – The impact of health

It is hypothesised that the more health conditions reported and the greater their impact on physical and mental functioning as assessed by the SF12, the less likely participants are to consider themselves to be ageing successfully.

Participants ageing with a disability

The correlational analysis (see Table 12) suggests that physical functioning has a weak positive relationship $r (193) = .191, p < .01$ to self-reported scores of successful ageing. Neither mental functioning ($p = .091$) nor the number of health conditions were associated with successful ageing scores ($p = .535$), although the number of medical conditions endorsed was negatively associated with physical health functioning $r (193) = -.259, p > .001$.

Participants ageing without a disability

The correlational analysis (see Table 12) found that for those participants ageing without a disability, mental functioning has a weak positive relationship $r (173) = .202, p < .01$, to self-reported scores of successful ageing. Neither physical functioning ($p = .112$) nor the number of health conditions were associated with successful ageing scores ($p = .927$), although the number of medical conditions endorsed was negatively associated with physical health functioning $r (171) = -.452, p > .001$, and mental health functioning $r (173) = -.234, p > .001$. 
Table 12. Correlations between successful ageing scores and measures of physical health

<table>
<thead>
<tr>
<th>Disability Status</th>
<th>Ageing successfully</th>
<th>SF12 PCS Score</th>
<th>SF12 MCS Score</th>
<th># Medical Conditions Endorsed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Ageing successfully</td>
<td>1</td>
<td>.191**</td>
<td>.122</td>
</tr>
<tr>
<td></td>
<td>SF-12 PCS</td>
<td>1</td>
<td>-.100</td>
<td>-.259**</td>
</tr>
<tr>
<td></td>
<td>SF-12 MCS</td>
<td>1</td>
<td>1</td>
<td>-.109</td>
</tr>
<tr>
<td>N</td>
<td>194</td>
<td>193</td>
<td>194</td>
<td>194</td>
</tr>
<tr>
<td>No</td>
<td>Ageing successfully</td>
<td>1</td>
<td>.122</td>
<td>.202**</td>
</tr>
<tr>
<td></td>
<td>SF-12 PCS</td>
<td>1</td>
<td>.119</td>
<td>-.452**</td>
</tr>
<tr>
<td></td>
<td>SF-12 MCS</td>
<td>1</td>
<td>1</td>
<td>-.234**</td>
</tr>
<tr>
<td>N</td>
<td>173</td>
<td>171</td>
<td>173</td>
<td>173</td>
</tr>
</tbody>
</table>

SF-12 PCS = SF-12 Physical Component Score
SF-12 MCS = SF-12 Mental Component Score

Note: ** p < .01

A hierarchical multiple regression was then undertaken to assess whether there were differences between how health influenced successful ageing between the two groups after controlling for the demographic variables.

Participants ageing with a disability

The demographic variables, gender, age, income levels and country of residence were added as Step 1, and were found to be a non-significant contributor to successful ageing scores (p = .263). The variables SF-12 PCS, SF-12 MCS and Number of Medical Conditions endorsed were added in at Step 2 (see Table 13). The total variance explained by the final model was 7.2% however this remained a non-significant result (F (7, 183) = 2.014, p = .056 suggesting that physical and mental health are not significant drivers of successful ageing for those ageing with a disability.
Participants ageing without a disability

The demographic variables, gender, age, income levels and country of residence were entered into Step 1 and were found to contribute 7% to the variance in successful ageing scores ($F (4, 166) = 3.105, p < .05$). The variables SF-12 PCS, SF-12 MCS and Number of Medical Conditions endorsed were added in at Step 2 (see Table 13). The total variance explained by the final model was 11.5% ($F (7, 163) = 3.012, p < .01$). Overall the health variables explained an additional 4.5% of the variance in successful ageing after controlling for demographic variables, $R^2$ change = .045, $F_{change} (3,163) = 2.757, p < .05$. In the final model gender ($\beta = -.153, t = -2.056, p < .05$), income level ($\beta = .161, t = 2.136, p < .05$) and SF-12 scores for mental functioning ($\beta = .190, t = 2.426, p < .05$) were found to contribute significant unique variance. Overall being male explained 2.3% of the overall variance, income level an additional 2.4%. The single largest contributor to variance explained was mental health functioning, which explained 3.2% of the variance in the model.
Table 13. *Hierarchical Regression Analysis of the predictiveness of health variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE\ B$</td>
<td>$\beta$</td>
<td>$B$</td>
<td>$SE\ B$</td>
<td>$\beta$</td>
</tr>
<tr>
<td><strong>For those ageing with a disability (n = 194)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Age</td>
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<td>.01</td>
<td>-.01</td>
<td>.00</td>
<td>.02</td>
<td>.02</td>
</tr>
<tr>
<td>Gender</td>
<td>.12</td>
<td>.18</td>
<td>.05</td>
<td>.13</td>
<td>.18</td>
<td>.05</td>
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<tr>
<td>Income</td>
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<td>.11</td>
<td>.17*</td>
<td>.17</td>
<td>.11</td>
<td>.12</td>
</tr>
<tr>
<td>Country</td>
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<td>.08</td>
<td>-.02</td>
<td>-.02</td>
<td>.08</td>
<td>-.02</td>
</tr>
<tr>
<td>SF-12 PCS</td>
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<td></td>
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<td>.01</td>
<td>.20*</td>
</tr>
<tr>
<td>SF-12 MCS</td>
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<td></td>
<td></td>
<td>.02</td>
<td>.01</td>
<td>.12</td>
</tr>
<tr>
<td>No. medical conditions</td>
<td>.01</td>
<td>.11</td>
<td></td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.03</td>
<td></td>
<td></td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td>1.32</td>
<td></td>
<td></td>
<td>2.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>For those ageing without a disability (n = 173)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.01</td>
<td>.01</td>
<td>.02</td>
<td>-.01</td>
<td>.01</td>
<td>-.04</td>
</tr>
<tr>
<td>Gender</td>
<td>-.26</td>
<td>.13</td>
<td>-.15*</td>
<td>-.26</td>
<td>.13</td>
<td>-.15*</td>
</tr>
<tr>
<td>Income</td>
<td>.18</td>
<td>.07</td>
<td>.19*</td>
<td>.15</td>
<td>.07</td>
<td>.16*</td>
</tr>
<tr>
<td>Country</td>
<td>-.07</td>
<td>.05</td>
<td>-.10</td>
<td>-.04</td>
<td>.05</td>
<td>-.07</td>
</tr>
<tr>
<td>SF-12 - PCS</td>
<td></td>
<td></td>
<td></td>
<td>.02</td>
<td>.01</td>
<td>.14</td>
</tr>
<tr>
<td>SF-12 - MCS</td>
<td></td>
<td></td>
<td></td>
<td>.02</td>
<td>.01</td>
<td>.19*</td>
</tr>
<tr>
<td>No. medical conditions</td>
<td>.15</td>
<td>.10</td>
<td></td>
<td>.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.07*</td>
<td></td>
<td></td>
<td>.12**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td>3.11*</td>
<td></td>
<td></td>
<td>2.76**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SF-12 PCS = SF-12 Physical Component Score, SF-12 MCS = SF-12 Mental Component Score

*p < .05. **p < .01, ***p < .001.
Hypothesis 4 - The role of income levels and housing situation

It is hypothesised that income levels and the security of housing will contribute significant variance to successful ageing scores.

To test the influence that income levels and housing status would exert on successful ageing a hierarchical multiple regression was undertaken to assess whether there were differences between the two groups after controlling for the demographic variables (see Table 14).

Participants ageing with a disability

The demographic variables, gender, age and country of residence were added as Step 1, and were found to not contribute any variance towards successful ageing scores ($p = .997$). The variables Income Level and Housing Situation were added in at Step 2. The total variance explained by the final model was 2.7% however this remained a non-significant result ($F (5, 186) = 1.022, p = .406$).

Participants ageing without a disability

The demographic variables, gender, age and country of residence were added as Step 1, and were found to be a non-significant contributor to successful ageing scores ($p = .100$). The variables Income Level and Housing Situation were added in at Step 2. The total variance explained by the final model was 8.3% ($F (5, 167) = 3.015, p < .05$).

Overall the income and housing variables explained an additional 4.7% of the variance in successful ageing after controlling for demographic variables, $R^2$ change = .047, $F_{change} (2,167) = 4.239, p < .05$. In the final model only income level ($\beta = -.176, t = 2.315, p < .05$) was found to contribute significant unique variance. Overall income levels explained 3.0% of the variance in the model.
Table 14. *Hierarchical Regression Analysis of the predictiveness of income and housing variables on successful ageing scores*

<table>
<thead>
<tr>
<th>Variable</th>
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<tr>
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*For those ageing with a disability (n = 190)*

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<td>Income</td>
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<td>.08*</td>
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<td></td>
<td></td>
<td>4.24*</td>
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*For those ageing without a disability (n = 171)*

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

"For those ageing with a disability (n = 190)

For those ageing without a disability (n = 171)"
Hypothesis 5 – Resilience

It is hypothesised that as older adults ageing with disabilities are likely to have had to overcome accumulating adversity over time, the strength of the relationship between resilience and successful ageing will be stronger in those ageing with a disability relative to those ageing without.

A hierarchical multiple regression was undertaken to assess whether there were differences between resilience levels between the two groups after controlling for the demographic control variables – gender, age, income level, and country – after the file was split by disability status.

Participants ageing with a disability

Demographic variables were entered into Step 1 and proved to be non-significant in terms of their contribution towards successful ageing $R^2 = .027, F (4, 187) = 1.280, p = .279$, see Table 15 for details. After entry of the CD-RISC-25 score at step 2 the total variance explained by the model was 8% ($F (5, 186) = 3.238, p < .01$). Resilience scores explained an additional 5.3% of the variance in successful ageing after controlling for age and income levels, $R^2 change = .053, F_{change} (1, 186) = 10.802, p < .01$. In the final model only resilience score was statistically significant, ($\beta = .235, t = 3.287 p < .01$).
Table 15. Hierarchical Regression Analysis testing the predictiveness of resilience on successful ageing scores

<table>
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<td>SE B</td>
<td>β</td>
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<td>.13</td>
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<tr>
<td>Country</td>
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<td>.08</td>
<td>-.02</td>
<td>.00</td>
<td>.08</td>
<td>.00</td>
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<tr>
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<td></td>
<td>.02</td>
<td>.00</td>
<td>.24**</td>
<td></td>
</tr>
<tr>
<td>( R^2 )</td>
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<td>.03</td>
<td></td>
<td>.08**</td>
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</tr>
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<td>( F ) for change in ( R^2 )</td>
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<td>1.28</td>
<td></td>
<td>10.80**</td>
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</table>

For those ageing with a disability (n = 191)

For those ageing without a disability (n = 172)

<table>
<thead>
<tr>
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<th>Model 1</th>
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<th></th>
<th></th>
<th>Model 2</th>
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<td>β</td>
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<td>SE B</td>
<td>β</td>
<td></td>
</tr>
<tr>
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<td>.01</td>
<td>.02</td>
<td>-.01</td>
<td>.01</td>
<td>-.05</td>
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<tr>
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<td>Resilience</td>
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<td>.01</td>
<td>.39***</td>
<td></td>
</tr>
<tr>
<td>( R^2 )</td>
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<td>.07*</td>
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<td>.21***</td>
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<td>27.77***</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Participants ageing without a disability

Demographic variables were entered into Step 1, see table 15 above and were found to explain 7.3% of the variance in successful ageing scores \( (F(4,168) = 3.323, p<.05) \). After entry of the CD-RISC-25 resilience scores at step 2 the total variance explained by the model was 20.5% \( (F(5,167) = 8.636, p <.001) \). Resilience scores explained an additional 13.2% of the variance in successful ageing after controlling for gender and income levels, \( R^2 \) change = .132, \( F_{\text{change}}(1,167) = 27.771, p <.001 \). In the
final model both gender ($\beta = -1.67, t = 2.402, p < .05$) and resilience were statistically significant, ($\beta = .386, t = 5.270, p < .01$). At Step 2, income levels were no longer a significant unique contributor to the model. Gender however remained a significant unique predictor with the semi-partial correlation revealing that it continues to explain 3% of the variance in successful ageing scores.

A moderation analysis, using PROCESS for SPSS version 3.0 (Hayes, 2017), was subsequently conducted to test the hypothesis that an individual’s disability status would moderate the relationship between resilience and perceptions of ageing success. The overall model was significant, $R^2 = .145, F(3, 363) = 27.791, p < .001$. In the second step of the regression analysis, the interaction term between disability status and resilience was entered. The interaction term did not account for a significant amount of additional variance in perceptions of ageing success, $R^2$ change $= .0004, F_{change} (1, 363) = .1649, p = .685$, thus disability status does not moderate the relationship between resilience perceptions of ageing success (see Figure 6).

![Figure 6. Moderation effect of disability status on the relationship between resilience and perceived ageing success](image-url)
Hypothesis 6 – Fairness and respect

6a) It was predicted that participants with greater expectations of injustice would have lower scores on mental health measures of the SF-12.

The data file was split to facilitate comparison between the groups. A hierarchical multiple regression was then undertaken to assess whether there were differences between mental health functioning between the two groups after controlling for the demographic control variables, gender and income level.

Participants ageing with a disability

Gender and income level were entered into Step 1 and were found to explain 3.7% of the variance in mental health functioning \((F (2, 185) = 3.516, p < .05)\). After controlling for gender and income levels in Step 1, the variables related to justice and fairness were added in step 2 (see Table 16). The total variance explained by the final model was 13.2% \((F (5, 182) = 5.549, p < .001)\). Overall justice and fairness variables explained an additional 9.6% of the variance in mental health scores after controlling for gender and income levels, \(R^2_{change} = .0.96, F_{change} (3, 182) = 6.688, p < .01\). In the final model both gender \((\beta = .148, t = -2.010, p < .05)\) and procedural justice were statistically significant, \((\beta = .351, t = 3.757, p < .001)\). Based on the semi-partial correlations, gender contributed 2% of unique variance and procedural justice contributed 6.7% of unique variance to mental health scores. Overall the results suggest that female participants ageing with a disability who perceive that they are treated fairly by governments, institutions, business and society were more likely score higher on the mental health functioning scale of the SF-12.
Participants ageing without a disability

Gender and income level were entered into Step 1 and proved to be non-significant in terms of their contribution towards mental health functioning $R^2 = .024$, $F (2, 165) = 2.054, p = .131$. After controlling for gender and income levels in Step 1, the variables related to justice and fairness were added in step 2 (see Table 16). The total variance explained by the final model was 28.1% ($F (5, 162) = 12.636, p < .001$). Overall justice and fairness variables explained an additional 25.6% of the variance in mental health functioning after controlling for gender and income levels, $R^2$ change = .256, $F_{change} (3, 162) = 19.237, p < .01$. In the final model both anticipatory injustice concerns ($\beta = -.284, t = -4.108, p < .001$) and procedural justice were statistically significant, ($\beta = .450, t = 5.458, p < .001$). Based on the semi-partial correlations, anticipatory injustice concerns contributed 9.4% of unique variance and procedural justice contributed 13.2% of unique variance to successful ageing scores. Overall the results suggest that participants ageing without a disability who perceived that they are treated unfairly and anticipate that they will be treated unfairly in the future by governments, institutions, business and society were more likely score lower on scores related to mental health.
Table 16. Hierarchical Regression Analysis of the predictiveness of fairness and respect variables on mental health scores as measured by the SF-12 Mental Component Score

<table>
<thead>
<tr>
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<th>Model 2</th>
</tr>
</thead>
<tbody>
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<tr>
<td>---------------------------------</td>
<td>----</td>
<td>------</td>
</tr>
<tr>
<td><strong>For those ageing with a disability (n = 187)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Gender</td>
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<tr>
<td>Income</td>
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<td>.67</td>
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<tr>
<td>Anticipatory Injustice Concerns</td>
<td>- .09</td>
<td>.12</td>
</tr>
<tr>
<td>Anticipatory Injustice Fairness</td>
<td>.12</td>
<td>.23</td>
</tr>
<tr>
<td>Procedural Justice</td>
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<td>.07</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.04*</td>
<td></td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td>3.52*</td>
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</tr>
<tr>
<td><strong>For those ageing without a disability (n = 167)</strong></td>
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<tr>
<td>Gender</td>
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<td>.09</td>
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<tr>
<td>$F$ for change in $R^2$</td>
<td>2.05</td>
<td></td>
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</tbody>
</table>

*p < .05. **p < .01, ***p < .001.
6b) It is hypothesised that the activation of injustice concepts will significantly predict lower ratings of successful ageing across both groups, and that individuals ageing with a disability will be more likely to endorse concerns about future treatment, rating higher on measures of anticipatory injustice and lower on procedural justice relative to those ageing without a disability.

The data file was split to facilitate comparison of the results for both groups of participants. A hierarchical multiple regression was then undertaken to assess whether there were differences in resilience levels between the two groups after controlling for the demographic control variables, gender and income level (see Table 17 for results).

Participants ageing with a disability

After controlling for gender and income levels in Step 1, the variables related to justice and fairness were added in step 2 (See Table 23 above). The total variance explained by the model was 21.7% ($F (5, 182) = 10.104, p < .001$). Overall justice and fairness variables explained an additional 19.2% of the variance in successful ageing after controlling for gender and income levels, $R^2_{change} = .192, F_{change} (3, 182) = 14.488, p < .01$. In the final model only anticipation that one would be treated unfairly was found to contribute significantly unique variance, ($\beta = -.383, t = -4.393 p < .001$), accounting for 8.2% of the total variance in successful ageing scores.
Table 17. *Hierarchical Regression Analysis of the predictiveness of fairness and respect variables on successful ageing scores*

<table>
<thead>
<tr>
<th>Variable</th>
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<tr>
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<td></td>
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<td>Anticipatory Injustice Fairness</td>
<td>- .16</td>
<td>.04</td>
<td>-.38***</td>
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<td>Procedural Justice</td>
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*For those ageing with a disability ($n = 187$)*

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<tr>
<td>Income</td>
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</tr>
<tr>
<td>Anticipatory Injustice Concerns</td>
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<td></td>
<td></td>
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<tr>
<td>Anticipatory Injustice Fairness</td>
<td>-.02</td>
<td>.02</td>
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<td>Procedural Justice</td>
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<td>-.38***</td>
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<tr>
<td>$R^2$</td>
<td>.06**</td>
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<td>.17***</td>
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<td></td>
<td>7.27***</td>
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</table>

*Participants ageing without a disability*

After controlling for gender and income levels in Step 1, the variables related to justice and fairness were added in step 2 (see Table 17 above). The total variance explained by the model was 17.2% ($F(5, 162) = 6.722, p < .001$. Overall justice and fairness variables explained an additional 11.1% of the variance in successful ageing after controlling for gender and income levels, $R^2$ change = .111, $F_{change}(3, 162) = 7.265$, $p < .01$. In the final model both gender ($\beta = -.145, t = -2.010, p < .05$) and procedural
justice were statistically significant, (β = .359, t = 4.061, p < .01). Based on the semi-
partial correlations, gender contributed 2% of unique variance and procedural justice
contributed 8.4% of unique variance to mental health component scores. Overall the
results suggest that older adults who perceive that they are treated fairly by
governments, institutions, business and society were more likely score higher on the
successful ageing variable.

In order to test the hypothesis that an individual’s disability status moderates the
relationship between measures of justice and fairness and perceptions of ageing success,
a series of moderation analyses using PROCESS for SPSS version 3.0 (Hayes, 2017)
were subsequently conducted.

The first analysis tested whether an individual’s disability status moderates the
relationship between anticipated injustice - fairness and perceptions of ageing success.
The overall model was significant, $R^2 = .185, F(3, 363) = 16.814, p < .001$. In the final
model, anticipated injustice - fairness scores, $b = -.111, t(363) = -5.528, p < .001$, and
disability status, $b = .504, t(363) = 4.897, p < .001$ were significant predictors of
perceptions of ageing success.

In the second step of the regression analysis, the interaction term between
anticipated injustice - fairness and disability status was entered. The interaction term
accounted for a significant amount of additional variance in perceptions of ageing
success, $R^2 \text{ change} = .033, F_{\text{change}} (1, 363) = 11.813, p = < .001, b = .135, t(363) = 3.437,
p < .001$. Thus, disability status was a significant moderator of the relationship between
anticipated unfairness and perceptions of ageing success. The unstandardized simple
slope for participants ageing with a disability for anticipated fairness was -.040, the
unstandardized simple slope for participants ageing with a disability for anticipated
fairness was -.174 (see Figure 7).
Figure 7. Moderation effect of disability status on the relationship between anticipated fairness and perceptions of ageing success

Moderation analyses testing whether an individual’s disability status moderates the relationship between anticipatory concerns and perceptions of ageing success, and between procedural justice and perceptions of ageing success were also conducted but in each case the interaction term did not account for a significant amount of additional variance in perceptions of ageing success.
**Hypothesis 7 – Autonomy**

*It is hypothesised higher levels of autonomy as measured by the MIDI Sense of Control Scales, Ryff’s autonomy subscale will be predictive of higher perceived successful ageing scores.*

The SPSS data file was split to facilitate comparison of participants based on disability status. A hierarchical multiple regression assessed whether there were differences between resilience levels between the two groups after controlling for the demographic control variables, gender and income level.

**Participants ageing with a disability**

After controlling for gender and income levels in Step 1, the variables related to autonomy (MIDI Mastery, MIDI Constraints and Ryff’s autonomy subscale) were added in step 2. The total variance explained by the model was 17% ($F(7, 183) = 5.369, p < .001$), see Table 18. Overall the autonomy variables explained an additional 14.4% of the variance in successful ageing after controlling for gender and income levels, $R^2$ change = .144, $F_{change} (3,183) = 10.552, p < .01$. In the final model only income level ($\beta = .178, t = -2.475, p < .05$) and Ryff autonomy scores were found to contribute significant unique variance, ($\beta = .373, t = 5.472, p < .001$). Although the income level contribution was found to be significant, it accounted for only 2.8% of the total variance in the successful ageing scores, (based on the semi-partial correlations). Scores on the Ryff autonomy subscale explained the majority on variance for successful ageing scores, providing a significant unique contribution of 13.5% towards the total variance in successful ageing scores.
Participants ageing without a disability

After controlling for gender and income levels in Step 1, the variables related to autonomy (see above) were entered. The total variance explained by the model was 12.3% \((F(7, 164) = 3.274, p < .01)\), see Table 18. Overall the addition of autonomy variables significantly improved the predictive power of the initial model, \(R^2\) change = .053, \(F_{\text{change}}(3, 164) = 3.272, p < .05\), explaining an additional 5.3% of the variance in successful ageing after controlling for gender and income levels. In the final model income, \((\beta = .163, t = 2.194, p < .05)\), gender \((\beta = -.150, t = -2.024, p < .05)\) and Ryff’s autonomy subscale \((\beta = .210, t = 2.781, p < .01)\) were statistically significant. Based on the semi-partial correlations, income contributed 2.6% unique variance, gender contributed 2.2% of unique variance and Ryff’s autonomy scale contributed 4.1% of unique variance to successful ageing scores.
Table 18. **Hierarchical Regression Analysis of the contribution of autonomy variables on successful ageing scores**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
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</thead>
<tbody>
<tr>
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<td></td>
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<tr>
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<td>.26</td>
<td>.10</td>
<td>.18*</td>
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<td>.00</td>
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<td>-.02</td>
<td>-.05</td>
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<td>-.04</td>
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<td>MIDI Mastery</td>
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<td>-.01</td>
</tr>
<tr>
<td>MIDI Constraints</td>
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<td></td>
<td></td>
<td>-.01</td>
<td>.01</td>
<td>-.05</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.03</td>
<td></td>
<td></td>
<td>.17***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( F ) for change in ( R^2 )</td>
<td>1.28</td>
<td></td>
<td></td>
<td>10.55***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| For those ageing without a disability (n = 171) |     |      |      |     |      |      |
| Gender                 | -.26| .13  | -.15*| -.26| .13  | -.15*|
| Income                 | .18 | .07  | .19* | .16 | .07  | .16* |
| Age                    | .01 | .01  | .02  | .01 | .08  | -.04 |
| Country                | -.07| .05  | -.10 | -.08| .05  | -.13 |
| Ryff Autonomy          |     | .04  | .21**|     |      |      |
| MIDI Mastery           |     | -.02 | .11  |     |      |      |
| MIDI Constraints       |     | .01  | .06  |     |      |      |
| \( R^2 \)              | .07*|      |      | .12*|      |      |
| \( F \) for change in \( R^2 \) | 3.15*|      |      | 3.27*|      |      |

\( ^* p < .05. \quad ^{**} p < .01, \quad ^{***} p < .001. \)
**Hypothesis 8 – Attitudes to ageing**

8a) *It is hypothesised that participants with higher physical health scores will have more positive attitudes to ageing.*

Relationships between physical health scores and attitudes to ageing variables are provided in Table 19.

**Table 19. Correlations between physical health functioning and attitude to ageing**

<table>
<thead>
<tr>
<th></th>
<th>AAQ Psychosocial Loss</th>
<th>AAQ Physical Change</th>
<th>AAQ Psychological Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants ageing with a disability (N = 193)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SF-12 - PCS</td>
<td>.117</td>
<td>.419**</td>
<td>.018</td>
</tr>
<tr>
<td>Participants ageing without a disability (N = 171)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SF-12 - PCS</td>
<td>-.237**</td>
<td>.261**</td>
<td>.034</td>
</tr>
</tbody>
</table>

SF-12 PCS = SF-12 Physical Component Score, SF-12 MCS - SF-12 Mental Component Score

**Correlation is significant at the .01 level (two-tailed)**

Consistent with previous research, higher physical health scores as measured by the physical component of the SF-12 were associated with more positive attitudes to ageing as measured by the AAQ Physical Change scale in both those ageing with and without a disability. The strength of the correlation was strongest among participants ageing with a disability, *r* (193) = .419, *p* < .001 relative to those ageing without a disability, *r* (171) = .261, *p* < .01. No other significant correlations were found between physical health and other attitude to ageing scales. Conversely a small to medium negative correlation was found between physical health scores and psychosocial loss for participants ageing without a disability, *r* (171) = .237, *p* < .01.
8b) It is hypothesised that scores on AAQ-psychological growth and AAQ-physical change will be positively related to ageing successful with a disability, and will contribute unique variance to self-reported successful ageing for those ageing with a disability.

The data file was split to facilitate comparison of results between groups and a hierarchical multiple regression was used to assess whether there were differences between the two groups after controlling for the demographic variables.

**Participants ageing with a disability**

Age, gender, country of residence and income level were entered into Step 1 and were found to explain 2.7% of the variance in successful ageing scores ($F(4, 187) = 1.280, p>.05$), see Table 20. After controlling for demographic variables in Step 1, the variables related to attitudes to ageing were added in step 2. The total variance explained by the final model was 24.2% ($F(7, 184) = 8.400, p<.001$). Overall attitudes to ageing variables explained an additional 21.6% of the variance in successful ageing after controlling for demographic variables, $R^2$ change = .216, $F_{change}(3,184) = 17.442, p<.01$. In the final model both AAQ Physical Change ($\beta = .302, t = 3.613, p <.001$) and AAQ Psychological Growth were statistically significant, ($\beta = .215, t = 2.854, p <.01$). Based on the semi-partial correlations, AAQ physical change contributed 5.38% of unique variance and AAQ Psychological Growth contributed 3.35% of unique variance to successful ageing scores.

**Participants ageing without a disability**

Age, gender, country of residence and income level were entered into Step 1 and returned a non-significant result whereby only 0.7% of the variance in successful ageing scores ($F(4, 167) = 3.147, p>.05$). After controlling for demographic variables in Step 1, the variables related to attitudes to ageing were added in step 2. The total variance
explained by the final model was 18.2% \((F(7, 164) = 5.196 \ p <.05)\), see Table 20 for details. Overall attitudes to ageing variables explained an additional 11.1% of the variance in successful ageing after controlling for demographic variables, \(R^2\) change = .111, \(F_{\text{change}}(3,164) = 7.442, \ p <.01\). In the final model only AAQ Physical Change (\(\beta = .268, \ t = 3.226, \ p <.01\)) proved to be statistically significant, (\(\beta = .215, \ t = 2.854, \ p <.01\)), contributing 5.20% of unique variance to successful ageing scores. Taken together it appears that feeling better than one expected to at a given age helps contribute to a sense of ageing well.
Table 20. *Hierarchical Regression Analysis for the contribution of attitudes to ageing variable in explaining successful ageing scores*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
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<th>Model 2</th>
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<td>SE B</td>
<td>β</td>
<td>B</td>
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<tr>
<td>For those ageing with a disability (n = 190)</td>
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<tr>
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<td>AAQ Physical Change</td>
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<td></td>
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<td>AAQ Psychological Growth</td>
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<td>.04</td>
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</tbody>
</table>

For those ageing without a disability (n = 171)

| Gender                                | -.26    | .13     | -.15*   | -.21    | .12     | -.12    |         |         |         |         |         |         |
| Income                                | .18     | .07     | .19*    | .09     | .07     | .10     |         |         |         |         |         |         |
| Age                                   | .00     | .01     | .02     | -.01    | .01     | -.04    |         |         |         |         |         |         |
| Country                               | -.07    | .05     | -.10    | -.05    | .05     | -.07    |         |         |         |         |         |         |
| AAQ Psychosocial Loss                 |         |         |         | .00     | .03     | -.01    |         |         |         |         |         |         |
| AAQ Physical Change                   |         |         |         | .08     | .03     | .27**   |         |         |         |         |         |         |
| AAQ Psychological Growth              |         |         |         | .05     | .03     | .14     |         |         |         |         |         |         |
| $R^2$                                  | .07*    |         |         | .18***  |         |         |         |         |         |         |         |         |
| $F$ for change in $R^2$                | 3.15*   |         |         | 7.44***  |         |         |         |         |         |         |         |         |

*p < .05. **p < .01, ***p < .001.
Hypothesis 9 – Sense of purpose in life

9a) It is hypothesised that higher sense of purpose as measured by the Ryff purpose in life subscale scores will contribute unique variance to self-reported successful ageing for participants ageing with and without a disability.

The data file was split to facilitate comparison of the results between those ageing with and without a disability. A hierarchical multiple regression was then undertaken to assess whether there were differences between the two groups after controlling for the demographic variables.

Participants ageing with a disability

Age, gender, country of residence and income level were entered into Step 1 and were found to explain a non-significant 2.7% of the variance in successful ageing scores \((F(4, 187) = 1.280, p = .279)\). After controlling for demographic variables in Step 1, scores on the Ryff Purpose in Life subscale were added in step 2. The total variance explained by the final model was 12.3% \((F(5, 186) = 5.239, p < .001)\). Overall a sense of purpose explained an additional 9.7% of the variance in successful ageing after controlling for demographic variables, \(R^2\) change = .097, \(F_{change}(1,186) = 20.537, p < .01\) (see Table 21 for details). In the final model both income level (\(\beta = .157, t = 2.207, p < .05\)) and purpose in life scores were statistically significant, (\(\beta=.315, t = 4.532, p<.001\)). Based on the semi-partial correlations, income levels contributed 2.3% of unique variance and Purpose in Life scores contributed 9.7% of unique variance to successful ageing scores.

Participants ageing without a disability

Age, gender, country of residence and income level were entered into Step 1 and returned a significant result explaining 7% of the variance in successful ageing scores \((F
(4, 167) = 3.147, *p > .05). After controlling for demographic variables in Step 1, the variables related to attitudes to ageing were added in step 2. The total variance explained by the final model was 8% (*F (5, 166) = 2.905 *p < .05). In the final model only income level (*β = .192, *t = 2.568, *p < .05) was statistically significant. Based on the semi-partial correlations, income levels contributed 3.6% of unique variance to successful ageing scores. Overall the results suggest that for participants ageing without a disability a sense of purpose may not contribute to their sense of ageing well.

Table 21. *Hierarchical Regression Analysis of the predictiveness of sense of purpose variable on successful ageing scores*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
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<td>β</td>
<td>B</td>
<td>SE B</td>
<td>β</td>
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<td>-.06</td>
<td>.08</td>
<td>-.05</td>
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<td>Ryff Purpose in Life</td>
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<td>.06</td>
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<td>.32***</td>
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<tr>
<td>R²</td>
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<td>.12***</td>
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</tr>
<tr>
<td>F for change in R²</td>
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<td>20.54***</td>
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<tr>
<td>For those ageing without a disability (n = 171)</td>
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</tr>
<tr>
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<td>.18</td>
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<tr>
<td>R²</td>
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<td>.08*</td>
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<td>1.87</td>
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</tbody>
</table>

*p < .05, **p < .01, ***p < .001.
9b) It is also hypothesised that participants ageing with a disability with a high sense of purpose will report lower levels of physical health problems.

This hypothesis was supported. A weak positive relationship was found between sense of purpose (Ryff Purpose in Life subscale) and physical functioning as measured by the SF-12 Physical Component Score, $r(193) = .199, p < .01$. Interestingly the same relationship was found to negatively correlated in the cohort ageing without a disability, $r(171) = -.198, p < .01$.

**Hypothesis 10 – Model of successful ageing**

Finally, the preliminary model of successful ageing as outlined Study One was tested. It was hypothesised that the model, which in this analysis included satisfaction scores for physical health, memory, income, housing, fairness, resilience, positive attitude, social networks, autonomy and sense of purpose would explain a significant portion of the variance in successful ageing scores for participants ageing both with and without a disability.

**Participants ageing with a disability**

Age, gender and income level were entered into Step 1 of a hierarchical regression model and were found to explain a non-significant 2.5% of the variance in successful ageing scores ($F(3, 184) = 1.584, p = .195$). After controlling for demographic variables in Step 1, satisfaction with one’s own ageing scores on each domain were added in step 2. The total variance explained by Model Two was 29.4% ($F(13, 174) = 5.578, p < .001$). Overall the satisfaction scores explained an additional 26.9% of the variance in successful ageing scores after controlling for demographic variables, $R^2$ change $= .269$, $F_{change}(10, 174) = 6.631, p < .001$. Significant unique contributions were made by satisfaction with physical health, memory, resilience and sense of purpose, (see Table 22
for details of beta values). To test if the addition of attitudes to ageing were able to improve upon the preliminary model identified in Study One, the attitudes to ageing variables were added into the model as a third step. Model Three explained 36.5% ($F (16, 171) = 6.145, p < .001$) of the variance in self-rated successful ageing scores. Overall the addition of attitudes to ageing variables explained an additional 7.1% of the variance in successful ageing, $R^2$ change = .071, $F_{change} (3,171) = 6.365, p < .001$. At Step 3, satisfaction with physical health and memory explained unique variance in the model, as did psychological gain from the attitudes to ageing scores. Finally, to test if the variables relating to justice and fairness also improved the model, scores relating to justice concerns, sense of fairness and procedural justice were added in as a fourth step. Overall the fairness and respect variables added an additional 3.7% of the variance in successful ageing scores, $R^2$ change = .037, $F_{change} (3,168) = 3.503, p < .05$. In the final model satisfaction with physical health ($\beta = .303, t = 3.789, p < .001$), dissatisfaction with memory ($\beta = -.175, t = -2.334, p < .05$), AAQ psychological growth ($\beta = .223, t = 2.651, p < .01$) and fewer concerns about how one will be treated in future were statistically significant, ($\beta = -.209, t = -2.124, p < .05$). Based on the semi-partial correlations, satisfaction with health contributed 5.1% of unique variance, dissatisfaction with memory contributed 1.9% of unique variance, psychological growth contributed 2.5% of unique variance and fairness and respect contributed 1.6% of unique variance to successful ageing scores.

**Participants ageing without a disability**

Age, gender and income level were entered into Step 1 and were found to explain 6.1% of the variance in successful ageing scores ($F (3, 164) = 3.553, p < .05$). After controlling for demographic variables in Step 1, satisfaction with one’s own ageing scores on each domain were added in step 2. The total variance explained by Model Two
was 34.9% \( (F(13, 154) = 6.346, p < .001) \). Overall the satisfaction scores explained an additional 28.8% of the variance in successful ageing scores after controlling for demographic variables, \( R^2 \) change = .288, \( F_{\text{change}}(10,154) = 6.806, p < .001 \). Significant unique contributions were made by satisfaction with physical health (\( \beta = .229, t = 3.122, p < .05 \)), housing (\( \beta = .215, t = 2.429, p < .05 \)) and social connections, (\( \beta = .177, t = 2.185, p < .05 \)) (see Table 23 for details of beta values). At Step 3, attitudes to ageing variables were added into the model. Model Three explained 37.1% of the variance in self-rated successful ageing scores (\( F(16, 151) = 5.572, p < .001 \)). However at Step 3, the addition of attitudes to ageing variables did not add to the model, \( R^2 \) change = .022, \( F_{\text{change}}(3,151) = 1.793, p > .05 \). Step four added in variables related to being treated with fairness and respect and again these were not found to improve the model, \( R^2 \) change = .012, \( F_{\text{change}}(3,148) = .989, p = .400 \).

Successful ageing model by disability type

As a final analysis, participants ageing with a disability were split into small groups based on their primary diagnosis. Three groups were created. The first group represented those participants ageing with a physical disability, the second those ageing with a sensory disability and the final group represent those with chronic illnesses and conditions such as epilepsy and type I diabetes.

Participants ageing with a physical disability

Age, gender and income level were entered into Step 1 of a hierarchical regression model and were found not to contribute significant variance in successful ageing scores (\( F(3, 179) = .783, p = .507 \). After controlling for demographic variables in Step 1, satisfaction with one’s own ageing scores on each domain were added in step 2. The total variance explained by Model Two was 39.1% \( (F(13, 169) = 3.824, p < .001) \). A significant unique contribution was made by satisfaction with physical health (see Table
At Step 3, attitudes to ageing variables were added into the model. Overall the satisfaction scores explained an additional 36.2% of the variance in successful ageing scores after controlling for demographic variables, $R^2$ change = .362 $F_{\text{change}}(10,69) = 4.097$, $p < .001$. Model Three which took into account the addition of the attitudes to ageing scores explained 45.9% ($F(16, 66) = 3.652$, $p < .001$) of the variance in self-rated successful ageing scores, $R^2$ change = .069 $F_{\text{change}}(3,66) = 2.788$, $p < .05$. At Step 3, satisfaction with physical health remained the only unique contributor of variance ($\beta = .403$, $t = 2.887$, $p < .01$), based on the semi-partial correlation, satisfaction with health contributed 6.8% of unique variance to successful ageing scores. The addition of fairness and respect variables at step four did not improve the model, $R^2$ change = .021 $F_{\text{change}}(3,63) = .847$, $p > .05$.

**Participants ageing with a sensory disability**

The same process was followed as above for those ageing with a sensory disability ($n = 47$). Although significantly underpowered the results are shown in Table 25.

**Participants ageing with a chronic health condition disability**

The same process was followed as above for those ageing with a chronic health condition. Again this model was significantly underpowered ($n = 54$), however the results are shown in Table 26.
Table 22. Summary of Hierarchical Regression Analysis for Variables Predicting Successful Ageing in those ageing with a disability (N = 194)

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$R^2$                                    | .02  | .29*** | .37***| .40***|

$F$ for change in $R^2$                   | 1.58 | 6.63***| 6.37***| 3.50* |

AAQ Phys Change = AAQ Physical Change scale; AAQ Psych Growth = AAQ Psychological Growth scale; AAQ Psychsoc Loss = AAQ Psychosocial Loss scale

*p < .05.  **p < .01, ***p < .001.
Table 23. *Summary of Hierarchical Regression Analysis for Variables Predicting Successful Ageing in those ageing without a disability (N = 173)*

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\( R^2 \) | .06* | .35*** | .37*** | .38*** |
\( F \) for change in \( R^2 \) | 3.55* | 6.81*** | 1.79 | .99 |
Table 24. *Hierarchical Regression Analysis for Variables Predicting Successful Ageing in those ageing with a physical disability* \((N = 82)\)

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\(R^2\)         \(.03\)         \(.39***\)         \(0.46*\)         \(0.48*\)
\(F\) for change in \(R^2\) \(.78\) \(4.10***\) \(2.79*\) \(.85\)
Table 25. *Hierarchical Regression Analysis for Variables Predicting Successful Ageing in those ageing with a sensory disability* (N = 47)

<table>
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$R^2$ for change in $R^2$  1.26  1.63  5.35**  .63

AAQ Phys Change = AAQ Physical Change Scale; AAQ Psych Growth = AAQ Psychological Growth Scale; AAQ Psychsoc Loss = AAQ Psychosocial Loss Scale

*p < .05, **p < .01, ***p < .001.
Table 26. Summary of Hierarchical Regression for Variables Predicting Successful Ageing in those ageing with chronic conditions (N=54)

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$R^2$                                          .05     | .28      | .42      | .51*    |

$F$ for change in $R^2$                        .89     | 1.28     | 3.13**   | 2.20    |

AAQ Phys Change = AAQ Physical Change scale; AAQ Psych Growth = AAQ Psychological Growth scale; AAQ Psychsoc Loss = AAQ Psychosocial Loss scale

*p < .05, **p < .01, ***p < .001.
CHAPTER 10: STUDY TWO DISCUSSION

Study Two used an online survey to examine the importance and contribution of variables relating to the domains of physical and mental health, resilience, attitudes to ageing, sense of purpose in life, autonomy and justice on successful ageing. Furthermore, the study was designed to add to existing research by examining whether between group differences would be observed between those ageing with a disability and those ageing without a disability. Finally, this study also sought to test the extent to which the preliminary model, developed in Study One, accurately captures the domains that people ageing with and without disabilities consider important for successful ageing outcomes. This chapter discusses the results of Study Two and examines the findings in the context of the existing literature. It also suggests directions for future research.

Overview of findings

The mean scores of responses to the single-item successful ageing variable were above the mid-point of the scale for both groups of participants. This confirmed that both groups, irrespective of disability status, considered themselves to be ageing successfully. The finding reinforces the validity of the observation from Study One; participants ageing with a disability do not perceive themselves to be ageing unsuccessfully, even though ‘outsiders’ may not perceive this to be possible. Moreover, this finding extends that of the earlier study by Strawbridge, Wallhagen, and Cohen (2002), which found that although only 18% of participants in their study would be judged to be ageing successfully using the Rowe and Kahn (1997) definition, over 50% of participants rated themselves as ageing successfully.
The group that was ageing with a disability did, however, record a lower successful ageing score overall relative to those ageing without a disability. While this result was not entirely unexpected, previous research investigating quality of life (Barker, Kendall, Amsters, Pershouse, Haines, & Kuipers, 2009) revealed similar patterns. What was unexpected, was that the participants ageing with a disability also recorded lower mean scores for the importance rating of each domain. This is despite these domains being identified as important by Study One participants. There are a number of potential age and process related explanations for these discrepancies.

Firstly, although the age range of our participants was representative of previous research studies in this area (e.g., Molton & Yorkston, 2017), our cohort of participants was skewed towards younger ages, meaning that the average age of participants at 56 represents a fairly young cohort overall. In fact, the mean age of both groups of participants in Study Two was six years younger than the earlier study by Molton and Yorkston. Consequently, few participants ageing without a disability appear affected by age-related concerns; in fact, almost 50% of those ageing without a disability did not have any medical conditions, and the majority were still in paid employment (53%). As such, it is possible that participants ageing without a disability would evaluate the question using a cognitive heuristic processing strategy, relying on pre-existing knowledge structures and paying relatively little attention to the details at hand (Schwarz, 2000). This could mean that participants in this group may been more prone to cognitive biases such as making downward social comparisons or relying on negative stereotypes when forming their judgements, thus inflating their scores relative to those ageing with a disability.

Alternatively, research has also shown that those ageing with a disability are likely to begin experiencing age-related issues 15 to 20 years earlier than those who
are ageing without a disability (Kemp & Mosqueda, 2004). If one overlays this observation onto our participant pool, this would suggest that the group ageing with a disability may be functionally 15 to 20 years older than their chronological age, making them closer to ages 71 to 76 in terms of functioning. This raises the possibility that those ageing with a disability are potentially more likely to record successful ageing scores that are more similar to adults ageing without a disability who are considered to be nearing old age (e.g., over 74) age rather than approaching young-old ages (e.g., ages 65-74). Previous research has demonstrated that self-rated successful ageing scores typically decline with increasing age (Strawbridge, Wallhagen, & Cohen, 2002), thus it may be suggested that if participants ageing with a disability are more closely related in terms of physical functioning to those aged over 70, who do not have a long-term disability, their scores are more likely to be similar. We were unable to test this hypothesis in Study Two, however, due to a lack of participants aged 70 year or over.

An alternative explanation for the differences observed in satisfaction ratings between those ageing with and without a disability may relate to the positioning of the question relating to satisfaction with physical health. Positioned as the first question, this may have potentially primed participants ageing with a disability to consider their answers more carefully relative to those participants ageing without a disability. In Study One, participants ageing with a disability, even at younger ages, were observed to adopt a systematic processing strategy whereby they deliberately and consciously considered different aspects of ageing and critically evaluated their own experiences against this when thinking about the importance of, and satisfaction with, their own physical health. Furthermore, participants in Study One, often reported feeling judged by others based on their disability. As such, it is possible that positioning the physical question first, may have elicited a negative emotion, which
influenced the subsequent results. Research has consistently demonstrated that individuals who are negatively primed are more likely to undertake a more considered, bottom-up, processing strategy, that relies on evaluations of the details at hand when making a decision or judgement (Schwarz, 2000). Thus it may be argued, that the differences between scores for the groups, may also reflect internalised difficulties and pressures those ageing with disabilities, perceive in being able to reach the culturally endorsed ideals of successful ageing. According to Lamb (2014), those ageing in Westernised cultures are typically exposed to negative stereotypes that suggest that decline in old age is bad, and that independence is ideal. As such, Lamb argues that older adults are strongly encouraged and pressured to do all they can to avoid late-life disabilities and becoming burdensome. These sentiments were certainly raised by participants in Study One, all of whom perceived dependence as burdensome to significant others, as well as to their own mental state. This suggests that cultural ideals and perspectives may indeed influence a person’s perception of their ageing success, and for those ageing with a disability this ideal may ultimately devalue their perception of their own ageing success.

The importance and influence of specific aspects of successful ageing

Participants from both groups also positively endorsed the importance of all the domains of successful ageing identified in Study One and tested in Study Two. These included health related domains such as physical health and memory, as well as psychological factors such as resilience, positive attitude, autonomy, and sense of purpose. Importantly participants from both groups also endorsed the importance of the macro-social factors revealed in Study One, these included income, housing, fairness and respect and social participation. This suggests that the model may have
face validity at least from the lay perspective. The findings in relation to the specific domain areas tested are discussed in more detail in the next section.

**Physical health**

When looking at the rankings of the importance of the different domains, a number of important differences and similarities also emerged between the groups. First, similar rankings were observed for those ageing with and without a disability in relation to the importance of physical health. For those ageing with a disability, physical health was ranked second, while it was judged to be the most important domain for those ageing without a disability. These findings replicate the earlier research study by Molton and Yorkston (2017), which also found that maintaining physical health was important to older adults ageing with a disability. Physical health has also been found to be the most important aspect of successful ageing among community dwelling older adults (Iwasama & Iwasaki, 2014; Pruchno, Wilson-Genderson, & Cartwright, 2010; Ryff, 2014). Taken together, these findings suggest that, when asked, older adults typically attach high importance to physical health for ageing successfully. In spite of this, Study Two demonstrated that physical functioning contributed very little to self-rated successful ageing scores. Analyses confirmed that for those ageing with a disability, physical and mental health functioning were only weakly correlated with self-reported successful ageing scores, while the number of health conditions experienced had no relation to successful ageing. Similarly, for those ageing without a disability, the correlational analysis found no relationship between physical functioning and self-rated successful ageing scores. This was in spite of the fact that the number of health conditions reported was more strongly negatively associated with physical health functioning for those ageing without a disability, relative to those ageing with a disability. The results of the
hierarchical regression also provide accumulating support for the relative
unimportance of physical health measures for self-rated successful ageing, revealing
that neither physical or mental functioning, nor the number of health conditions
reported by those ageing with a disability explained significant variance in
individuals’ successful ageing scores, while they only made weak contributions for
those ageing without a disability.

The findings of both the correlational analysis and the hierarchical regression
stand in stark contrast to the contemporary models of successful ageing, which argue
that successful ageing is only possible in the absence of disease or disability (Rowe &
Kahn, 1997; Pruchno, Wilson-Genderson, & Cartwright, 2010). They also provide
additional evidence in support of suggestions that the current conception of physical
health as it applies to successful ageing (e.g., the absence of disease or disability) is
not only inappropriate for those ageing with a disability (Holstein & Minkler, 2003;
Rudman, 2015; Stone, 2003), but is also is not reflective of the subjective ratings of
those ageing either with or without a disability (Molton & Yorkston, 2017;
Strawbridge, Wallhagen, & Cohen, 2002). In this regard, the subjective aspect of
successful ageing with either long-term or potentially even age-related disabilities
appears to mirror the disability paradox observed by Albrecht and Devlieger (1999)
who argued that the key to maintaining high quality of life in spite of disabilities was
related to achieving a sense of balance, not just physically and mentally, but also
socially. They suggest that this occurs when individuals are able to adapt to their new
conditions and made sense of them. In the context of successful ageing, this process
is not unlike that described by Selective Optimisation with Compensation (SOC)
(Baltes & Baltes, 1990). In fact, while objective measures appear to have little impact
on an individual’s sense of ageing successfully, satisfaction with one’s health was
found to be a much stronger predictor of ageing success in both groups, explaining
over 13% of the variance in the model for those ageing with a disability, but slightly less than 4% for those aging without a disability. This, it may be argued that from the lay perspective subjective indicators are much more important that objective ones, making a significant contribution towards an individual’s sense of ageing successfully.

**Autonomy**

An important contributor to the sense of adaption and ageing successfully may be the retention of one’s autonomy as it allows an older individual to retain control of their activities and surroundings in line with the tenets of optimisation and selectivity as proposed by the SOC model (Baltes & Baltes, 1990). The group of participants ageing with a disability certainly ranked being able to make their own decisions as the most important aspect of successful ageing. The same factor was ranked fourth by the group of participants ageing without a disability. When examined at an individual level, higher scores on the Ryff autonomy subscale were predictive of greater self-reported successful ageing across both groups. The predictive power autonomy scores exerted on self-rated successful ageing scores, was however, higher for those ageing with a disability relative to those ageing without. Collectively, these findings provide convincing evidence that, the more a person is able to exercise autonomy as they age with a disability, the more likely they are to perceive themselves to be ageing successfully.

One explanation for the particular importance assigned to autonomy by those ageing with a disability, is that it may provide a protective function. For instance, empirical studies investigating the relationship between autonomy and disability have found that higher levels of autonomy are associated with lower pain-related disability (Matos, Bernardes, & Goubert, 2016). It is also possible that the discrepancies in
scores and rankings on autonomy variables between those ageing with and without disabilities relates to the different levels of exposure the two groups are likely to have had to periods of dependency and of negative stereotypes. For example, while the relative youthfulness of participants ageing without a disability, means that they are unlikely to have, as yet, experienced age-related difficulties that have threatened their autonomy, many of the participants in Study One discussed the temporary periods of dependence and loss of control they experienced as a result of their condition. Furthermore, the participants in Study One also reported experiences of being assumed to be incapable by members of their family, the public and/or health professionals. In all instances, participants in Study One explained how this had triggered a strong desire for independence and autonomy. It is likely that experiences such as these, may increase the salience and importance attributed to this domain by those ageing with a disability. Research conducted by Eklund, Mårtensson, and Eklund, (2014) and Ekdahl, Andersson, Wirenn and Fredrichsen, (2011), examining autonomy and self-determination in older adults who are users of health services certainly found similar results.

**Income and housing**

The findings of the hierarchical regression suggest that income levels may also interact with individuals’ level of autonomy to influence their ability to age successfully. Previous research has also shown that environmental factors, such as housing conditions, and income levels are as critical as personal characteristics in determining health outcomes (Cooper & Hasselkus, 1992). For instance, in a study conducted with low-income adults with physical disabilities in the District of Columbia, US, participants universally perceived barrier-free housing conditions to be a prerequisite for independent living and for ensuring their basic health and well-
being (Ho, Kroll, Kehn, Anderson, & Pearson, 2007). This suggests that macrosocial factors are likely to be essential contributors towards subjective successful ageing scores. Indeed, in a recent commentary, Rowe and Kahn (2015) also discussed the importance of broader socioeconomic factors in facilitating ageing well.

In our study, secure housing was ranked third in terms of importance by those ageing with a disability, while having an adequate income was ranked sixth. For those ageing without a disability the rankings were fourth and eight respectively. The positioning of these domains in terms of importance, supports the findings of Study One, which revealed that, for those ageing with a disability, having access to secure housing and adequate income to meet ongoing needs, was important for achieving a sense of ageing success. The finding that participants ageing with a disability were also less satisfied with their income may provide additional support to the findings of Clarke and Latham (2014) and Foster and Walker (2015), who observed that adults ageing with a disability often experience significant disadvantages in terms of their ability to earn sufficient income to pay for their needs in midlife, and will often be reliant, at least in part, on government funding sources and external providers for aids and equipment.

Interestingly, and contrary to expectations, the hierarchical multiple regression, which sought to determine whether income and housing held any predictive power in relation to self-reported successful ageing, was non-significant for those participants ageing with a disability. It is possible that this finding represents a sampling bias in this study, in that, even among those ageing with a disability, over 60% rated their current income level as sufficient, or more than sufficient for their needs, and over 60% either owned their home outright or were living with family. Thus, the sample may not be representative of the wider community ageing with a disability.
Alternatively, it may be suggested that the lower level of satisfaction reported with current income levels among those participants ageing with a disability may reflect a general but non-specific awareness and concern regarding the increased likelihood of needing additional equipment in the future, and how this will be paid for.

For those ageing without a disability, having sufficient income to meet one’s needs was found to contribute a small but significant amount of predictive power to self-rated ageing success. Once again though, almost 75% of those ageing without a disability rated their current income level as sufficient, or more than sufficient for their needs, potentially confounding the results.

An alternative possibility is that the categories used to measure income in this Study were not sensitive enough to detect any meaningful differences. For example, previous research uses income bands to determine whether income levels have an impact on the variable in questions (e.g. Clarke & Latham, 2014). This study on the other hand measured income on a five-point subjective scale ranging from 1 (wholly insufficient for my needs) to 5 (more than enough for my needs). The subjective nature of this scale is likely to have demonstrated less variability relative to banded objective measures. Therefore, it is possible that the influence income levels have on the ability to age successfully may be understated in this study.

**Sense of purpose**

Support was also found for the hypothesised positive impact that maintaining a high sense of purpose has on physical health, especially for those ageing with a disability. This suggests that sense of purpose may interact with health to assist those ageing with a disability to maintain their sense of ageing successfully. Participants from both groups rated having a sense of purpose as important for successful ageing, with both groups ranking this third in terms of importance. These findings provide
accumulating support for the theme identified in Study One, which revealed that for those ageing with a disability, activities that promote a sense of purpose and usefulness provided an important stimulus that encouraged a sense of ageing successfully.

There are a number of ways in which the body’s reaction to adversity may reduce the impact of health issues (Thompson, Coker, Krause, & Henry, 2003). Firstly, it is possible that finding a purpose in life may act as a buffer, limiting the allostatic load that accumulates over time and leads to ill health (Harrison and Stuifbergen, 2006). Secondly, it is likely that a sense of purpose contributes to a eudaemonic sense of wellbeing for those ageing with a disability. This finding is consistent with evidence for the role that sense of purpose plays in assisting older adults to retain a sense of relevance more broadly (Irving, Davis, & Collier, 2017). In their systematic review of 31 studies relating to sense of purpose in older adult populations, Irving et al., (2017) found that maintaining a greater sense of purpose was not only related to better health and wellbeing outcomes for older adults, but also provided ongoing opportunities for older adults to continue in contributing roles, thus sustaining their social value and sense of relevance. This highlights an important opportunity for future research and potentially suggests a target for future clinical interventions. The avoidance of pain, an aspect of hedonic wellbeing, cannot always be avoided by those aging with a disability, thus interventions that build a sense of purpose and eudaemonic wellbeing may well act to establish an important protective buffer.

For those ageing without a disability, scores on the sense of purpose measure did not add to the prediction of successful ageing. Additionally, the relationship between sense of purpose and physical health was found to be negatively correlated
for those ageing without a disability. It is likely that the younger participants, who also at this point have few health issues, continue to busy themselves with everyday life, and may not as yet concern themselves with the protective role that a sense of purpose can play in overcoming adversity (Frankl, 1963). This is not to suggest that a sense of purpose is not important in the longer-term. Research by Boyle, Buchman, Barnes and Bennett (2010a, 2010b) and Windsor, Curtis, and Luszcz, (2015) for example has found that community dwelling older adults who reported lower levels of purpose in life at younger ages were at increased risk of developing future age-related disabilities relative to those with a higher sense of purpose. While the cross-sectional nature of the current study does not permit us to test this hypothesis, this would be an important area for future research as it may reveal that this domain becomes increasingly important over time, helping older adults to become more resilient.

**Resilience**

As posited by Pruchno, Heid, and Genderson (2015), the mean resilience scores recorded by both groups suggest that being able to adapt to adversity is important to ageing successfully. The moderation analysis also revealed that the strength of the relationship between resilience and successful ageing was not significantly different between the two groups. Moreover, resilience scores as recorded on the Connor-Davidson Resilience Scale explained small but significant amounts of variance in successful ageing scores for both those ageing with and without a disability. This suggests that, similar to previous research exploring resilience and ageing, both participant groups in this study also recognise the importance of being able to cope with and adapt to changes over time (Bonnano, 2004; Silverman, Molton, Alschuler, Ehde, & Jensen, 2015).
Scores on the resilience measure were much more predictive of subjective ratings of successful ageing for those ageing without a disability than for those ageing with a disability. It is possible that this finding represents a more negative evaluation by those ageing with a disability in relation to their abilities to adapt as they encounter accumulating difficulties related to the accelerated ageing phenomenon experienced by many older adults who are ageing with a disability (Groah et al., 2012). This is consistent with participants in Study One, who reflected on their ability to adapt to ongoing changes and noted that it was becoming progressively harder as functional limitations increased. It is also possible that the ongoing stress and adversity likely to typify a lifetime managing a disability (Clarke & Latham, 2014), may also impact the perception older adults ageing with a disability hold, as to their ability to remain resilient in the face of ongoing challenges.

**Fairness and respect**

Participants from Study One discussed challenges relating to being treated fairly by governments and society. Based on these findings, it was hypothesised that activation of injustice concepts would predict lower levels of successful ageing, particularly among those ageing with a disability. This hypothesis was supported by the results of the hierarchical regression undertaken as part of Study Two. Likewise, the results of the moderation analysis found that there was an increased expectation among participants ageing with a disability that governments, institutions, business and society would treat them unfairly. Furthermore, participants ageing with a disability who perceived that people with similar backgrounds to themselves are more likely to be treated unfairly by governments, institutions, business and society were more likely to have poorer mental health component scores on the SF12 measure and score lower on the self-rated successful ageing variable.
Evidence from the disability field may offer a potential explanation for these results. Recent research from the United States suggests that for individuals with disabilities, self-identity often influences their perceptions of the fairness of welfare systems (Dorfman, 2017). Dorfman argued that individuals with disabilities who identify with the social model of disability are likely to hold a more critical view of the procedures for accessing and retaining benefits, seeing the process as one over which they have little influence, and that often treats them unfairly (Dorfman, 2017). Individuals who embrace this model, are more likely to see themselves as victims of prejudice and discrimination, or as survivors of unfair treatment (Shakespeare, 2012; Malhotra & Rowe, 2013). Several individual research studies, undertaken with racial minorities in the United States, also provide support for the notion that past discrimination leads to a lack of trust in others (Austin & Dodge, 1992; Crocker et al., 1998; Davidson & Friedman, 1998; Liebkind & Jasinskaja-Lahti, 2000). Further, there is indirect evidence that mistrust and negative expectations may subsequently act to increase sensitivity to unfair treatment, given that minorities are more likely than non-minorities to perceive behaviour directed towards them as unjust or discriminatory (Crocker, Major, & Steele, 1998; Davidson & Friedman, 1998; Evans & Herr, 1994; Vinson & Holloway, 1977).

Theorists have posited that as these perceptions develop, neural pathways become strengthened, such that, the more one has been exposed to perceived discrimination, the more likely injustice perceptions will likely to be activated in the future (Lord & Maher, 1991). Given the results of the current study, it may be hypothesised that participants ageing with a disability have also experienced similar treatment, as it is well recognised that ageism and negative stereotypes can have a negative impact on an individual’s self-worth (Swift, Abrams, Lamont, & Drury, 2017). To date though, research appears to have largely ignored the impact of fairness
and respectful treatment on ageing successfully. To the best of the author’s knowledge this study is the first to demonstrate that activation of injustice concepts predicts lower ratings of successful ageing across both groups. Indeed, the hierarchical regression model found that being treated fairly and anticipating that one will be treated fairly in the future predicted 19% of the variance in successful ageing scores for those ageing with a disability and 11% for those ageing without a disability. Taken together the results suggest that, as found in Study One, being treated fairly by others, and anticipating that one will be treated fairly in the future, are important elements in helping all participants achieve a sense of ageing successfully.

**Attitudes to ageing**

Both participant groups endorsed the importance of retaining a positive attitude for achieving a sense of successful ageing. Interestingly though, the participants ageing without a disability viewed maintaining a positive attitude as more important to ageing successfully (ranking it second) relative to those who were ageing with a disability, who ranked this domain fifth. Consistent with previous research (Low, Molzahn, & Schopflocher, 2013), it appears that feeling better than one expected to at a given age helps contribute to individuals’ sense of ageing well. In this study, more positive attitudes to ageing were associated with higher physical health scores across both groups, although in addition to feeling positive about their physical health, participants ageing with a disability were also more likely to perceive positives in growing older. Participants ageing with a disability, for example, endorsed a number of aspects of psychological growth, including the pleasant things about growing older, such as wisdom, and being able to share their knowledge with others, all of which were seen to contribute to a sense of ageing well. This finding builds upon the
research by Brothers, Miche, Wahl, and Diehl (2015), who found that holding more positive attitudes towards one’s own ageing predicted the perception of positive age-related changes. It also echoes the results of Study One, in that many of the participants viewed ageing as both a frustrating and rewarding stage of life, with a number noting both gratitude and disbelief that they had reached this milestone. Taken together, it is likely that participants who are better able to incorporate age-related changes within their identities and maintain a positive view of self are more likely to age successfully.

**Memory/Cognition**

For those ageing with a disability, a lack of dementia was rated last in terms of rank order of importance, whilst it was ranked sixth by those ageing without a disability. This is contrary to the prediction suggested by the findings of Study One. In fact, many of the participants in Study One had clearly noted the importance of cognitive functioning in terms of maintaining their sense of self and being able to continue to undertake their day-to-day activities. A possible explanation for the finding in Study Two, is that the importance of dementia is of less concern to participants, given the higher proportion of participants with disabilities from India where the detection of, and knowledge relating to dementia is much lower compared to that of Western nations (Vas et al, 2001; Shaji, Bose, & Verghese, 2005). Research suggests that dementia rates in Western countries vary between 5% and 10% after 60 or 65 years (Ferri, Prince, Brayne, Brodaty, Fratiglioni et al., 2005), whereas in India the rates vary from 1.4% to 3.5% (Vas et al, 2001; Shaji, Bose, & Verghese, 2005). While these differences may be due to differences in detection and diagnosis rates, they are also likely to influence participants’ views in relation to how likely they are to be affected themselves.
It is also possible that the differences between predicted and actual results also alludes to differences in values between a collectivist society (e.g., India), where older adults anticipate being cared for by family and thus may be less concerned about being able to retain their autonomy and control over decisions (Lamb, 2014). In comparison, participants from the United States are more likely to be ageing in an individualistic society and thus may anticipate the need to remain as self-reliant as possible for as long as possible (Lamb, 2014). Alternatively, it could be argued that participants ageing with a disability are also likely to have greater experience of coping with health adversities (Molton, Cook, & Jensen, 2011), and thus may be less fearful of a loss relative to older adults ageing without a disability who may not have had to deal with such difficulties themselves. Interestingly though, when satisfaction with the domains was explored, satisfaction with memory proved to be significant, suggesting a mismatch between stated importance and actual experience.

**Satisfaction with ageing success based on the ten domains**

The results of this study showed clear differences between those ageing with and without disability in terms of the contribution levels the various satisfaction scores made towards an individual’s sense of ageing well or successfully. For instance, for those ageing with a disability, satisfaction with physical health, memory, resilience and a sense of purpose explained unique positive variance in the model, suggesting that the theory of Selective Optimisation with Compensation (Baltes & Baltes, 1990), may assist older adults with disabilities retain a sense of ageing successfully. Although there are few studies exploring the use of SOC strategies in populations ageing with a disability, previous research undertaken with 248 older Canadian adults with osteoarthritis did find that optimisation in particular required the ability to anticipate difficulties before they arose (Gignac, Cott, & Badley, 2002).
This process certainly requires the use of cognitive abilities such as planning and preparation as well as coping skills, and thus may explain the central role that these factors played for participants ageing with a disability in our study. Importantly, the findings from this study also underscore the important roles that resilience and adaption appear to play in assisting those with disabilities to age successfully (Gignac, Cott, & Badley, 2002).

In comparison, for those ageing without a disability, higher levels of satisfaction with housing and social connections explained additional unique variance in the model, suggesting that, for these participants, engagement in their communities and potentially fulfilling social norms was more important to their sense of ageing successfully. It is possible that the differences in the satisfaction levels between factors for those ageing with and without disabilities again relates to differences in ageing trajectories for those again with and without disabilities. That is, participants ageing with a disability are more likely than those ageing without a disability to already be perceiving the start of age-related declines, many of which, as participants in Study One noted, are likely to impact day-to-day functioning (Kemp & Mosqueda, 2004; Krause, 1992). It is therefore perhaps not surprising that these participants are more likely to place greater emphasis on the areas that facilitate the continuation of their day-to-day activities. In comparison, many of the participants ageing without a disability are unlikely to be at that stage yet. Indeed, given the relatively young age of our cohort, it is likely that many participants ageing without a disability still have between 10 to 20 years of productive working life remaining (IndustrySuper, 2018; National Academy of Social Insurance, 2018). It is likely therefore, that for this group of older adults, more middle-aged concerns still predominate such as building a sense of security for themselves and possibly their families, as well as building supportive social networks (Vaillant & Mukamal, 2001). Thus, it may be suggested, that for the
participants ageing without a disability in this study the activity theory of ageing (Havighurst, 1961) is more likely to match their current experience.

**Test of the overall model as proposed in Study One**

The utility of the preliminary model (developed from the themes emerging from Study One) was tested in Study Two with both a broader cross-section of adults ageing with a disability and older adults ageing without a disability. Analysis revealed the importance rating of the factors did little to explain participants’ subjective ratings of their ageing success. In fact, an individual’s satisfaction with the various domains identified as important for ageing well was the strongest predictor of successful ageing. For those ageing with a disability, each incremental step in the model added unique variance, although a significant proportion of the variance was shared across variables. In the final model, satisfaction with physical health, memory, concerns about how one will be treated in future and positive attitudes to ageing were statistically significant predictors of self-perceived ageing success. The final model in Study Two explained 40% of the variance in successful ageing scores for those ageing with a disability and 38% for those ageing without a disability.

Study Two confirmed that although concerns in relation to fairness and respect were stronger for those ageing with a disability, they still contributed variance towards successful ageing scores for those ageing without a disability. Likewise, both groups rated accessible and appropriate housing and sufficient income (components of the safety and security theme) as important to be able to age successfully. These findings add to the accumulating evidence of a mismatch between academic definitions and those of lay individuals (Phelan, Anderson, LaCroix, & Larson, 2004). For example, the majority of successful ageing models support the exclusion of individuals ageing with disabilities (Cosco, Prina, Perales, Stephan, & Brayne,
Indeed, even the two-factor model proposed by Pruchno, Wilson-Genderson and Cartwright (2010), which recognizes the importance of subjective assessments of successful ageing still includes objective physical factors such as few chronic diseases/conditions, little to no pain and ample functional abilities in their model. Study Two clearly demonstrates that older adults who are ageing successfully are able to adapt and compensate for pain and disabilities and still maintain a sense of ageing successfully. Moreover, the review by Cosco et al. (2014) also demonstrates that little consideration has as yet been given to extrinsic and macrosocial supports such as access to appropriate housing and an adequate income in the successful ageing literature.

When the model was tested across different disability types, that is, physical, sensory and those with chronic conditions such as Type I diabetes and epilepsy, differences were noted in the results. For those with a physical disability, such as an SCI or post-polio syndrome, satisfaction with one’s own ageing scores on each domain explained almost 40% of the variance in successful ageing scores. The addition of variables relating to attitudes to ageing and justice and fairness increased the overall variance explained by the model to 48%. However neither of these variables contributed unique variance to the model, suggesting that their utility for this cohort of participants was limited. In fact, overall, the majority of the variance was shared across variables with only satisfaction with physical health contributing 19% of unique variance to the model, suggesting that this is a major driver of subjective ageing success. For those ageing with sensory disabilities and other chronic conditions the final models appeared to be even more powerful predictors of successful ageing. Caution is needed, however, in interpreting these results, as these models were significantly underpowered. These finding do nevertheless suggest that group differences will be important areas to explore in future research.
For those ageing without a disability, it appears that the preliminary model proposed by Study One also carries weight: after controlling for demographic variables, satisfaction with one’s own ageing scores on each domain contributed almost 35% of the variance in the model. In the final model, which explained 38% of the overall variance in successful ageing scores, only satisfaction with physical health and social connections contributed unique variance, although each contributed only 2.3% of unique variance to the model. This finding demonstrates a clear difference between those ageing with and without a disability. For those ageing with a disability, satisfaction with health appears to contribute much more towards an individual’s subjective rating of their ageing success, relative to those ageing without a disability, despite the likelihood that older adults ageing with a disability are contending with more physical limitations and secondary illness complications. Previous research in the rehabilitation field may offer an insight into this relationship. For example, individuals with disabilities such as a spinal cord injury who foster a positive disability identity are more likely to demonstrate active coping strategies such as hope, proactive coping, and sense of humour, which results in higher ratings of subjective well-being (Smedema, Catalano, & Ebener, 2010). Moreover, individuals with a positive disability identity are also more likely to participate in leisure activities that benefit their physical health and boost self-esteem and self-image (Heinemann, Goranson, Ginsburg, & Schnoll, 1989).

**Limitations**

There are some limitations to this work. First, this study relied upon self-report measures, and thus may be subject to social desirability and responder bias. In particular, self-report data increases the risk that while participants are trying to be honest, they may lack the introspective ability to provide an accurate response to a
question (Stone, 1999). Therefore, any self-report information provided may be incorrect despite the participant’s best efforts to be honest and accurate. Secondly, as the survey instrument was completed online and offered financial incentives for participation, there is the potential that some participants may have incorrectly reported their disability status in order to participate in the survey and claim the remuneration. While this is considered unlikely, and the level of remuneration was set at a nominal level to minimise this risk, it should nonetheless be taken into consideration when interpreting these results as incorrect reports may have acted to obscure group differences. Participants may also have interpreted questions differently than anticipated by the researcher as many of the constructs measured in this study are quite abstract in nature (e.g., resilience and autonomy) and potentially mean different things to different people. The study design meant that there was no opportunity for participants to ask the researcher for clarification as to the meaning of various questions should they have required it.

An additional potential limitation of this study is the limited control of the sample due to the use of the online MTurk platform. Unlike traditional paper and pencil tests that often require the researcher to be present for completion, use of the MTurk platform meant that the researcher had no control over the make-up of the study sample. For example, a limitation of this study is that the vast majority of participants in both groups owned their own homes and reported that their income was sufficient or more than sufficient for their needs. It is possible that those with a level of income that is insufficient for their needs would reveal a different pattern in terms of successful ageing. It will be important to survey a more economically diverse sample in the future. Additionally, although the age range of participants in this study is representative of previous research studies in this area (e.g., Molton & Yorkston, 2017) the mean age was slightly lower, with the mean of participants in our
study being 56 for those ageing both with and without a disability. It is possible that this difference relates to the differences in recruitment methods used in the two different studies. Study Two relied on participants having not only access to a computer and internet, but also having knowledge of and being registered as an MTurk worker, whereas the study by Molton and Yorkston recruited participants in a more targeted approach using medical centres and registered disability organisations such as The MS Society. In addition, this research likely required a smaller time commitment (participants averaged a completion time of around 20 minutes), and could be completed at the participants’ convenience whereas the Molton and Yorkston study employed phone based interviews and focus groups. It is possible that Study Two’s approach therefore was more appealing or convenient for slightly younger participants.

A further issue related to the geographical spread of participants, in that, although no particular countries were targeted, the majority of participants were recruited from the United States ($n = 194$) and India ($n = 157$). This is perhaps not surprising, as previous research suggests that the majority of MTurk workers are based predominantly in the United States and India (Ross, Zaldivar, Irani & Tomlinson, 2009; MTurk Tracker website, December 27, 2017). While the group of participants ageing with a disability were not statistically different demographically from the group of participants who were ageing without a disability, the limited geographic spread has only allowed us to make some initial observations about the role culture plays in perceptions of successful ageing, larger international research is therefore required to build this knowledge further and to determine where differences lie.
A further limitation of this study is that duration of the disability was not captured. This may have influenced the results, as the duration of disability could affect responses to a range of variables. It could be hypothesised for example, that those who have lived with their disability for less than 10 years may not yet have encountered many of the duration- or age-related complications, associated with ageing with a disability (Kemp & Mosqueda, 2004). Indeed, the duration of disability may act as an additional demographic variable for those ageing with a disability. Information was also not collected on education levels, which could act as an additional confounding demographic variable.

Limitations in terms of the length of questionnaire participants were judged to be able to complete in the time allowed also meant that certain domains of successful ageing were excluded from this study – including questions related to social networks and cognitive abilities. These will be important areas to explore in future research in order to determine their contribution to successful ageing.

Finally, it is possible that the MIDI Mastery and Constraints Subscales used in this study were not as sensitive, or perhaps were not well suited, to measuring the constructs that we were attempting to test in Study Two. The scores recorded on these measures were not found to be predictive of successful ageing, suggesting that perhaps these scales which are more general measures of self-efficacy and an external locus of control were not well suited to measuring the construct that participants in Study One reported, which appears to relate more to autonomy and control. Therefore, future research should aim to identify measures that are better able to capture the control element of autonomy.
CHAPTER 11: GENERAL DISCUSSION

The overall aim of this thesis was to investigate current models of successful ageing from the perspective of those ageing with a disability. Using Rowe and Kahn’s (1997) model of successful ageing as a starting point, the thesis investigated the domains or factors that are important and assist those with physical disabilities to maintain a sense of ageing successfully. Consideration was given not just to ‘what’ contributes to successful ageing with a disability but also to ‘how’ people age successfully using Selective Optimisation with Compensation (Baltes & Baltes, 1990) as a reference point. This chapter brings together the major findings of this thesis, identifies key themes and discusses their contribution to the current literature.

Previous research into successful ageing has been largely directed at separating those ageing ‘successfully’ from those ageing with chronic conditions or disabilities (Bowling and Illiffe, 2006; Pruchno, Wilson-Genderson, Rose & Cartwright, 2010; Rowe & Kahn, 1987; 1997). This study sought to investigate what it means to age well with a physical disability to determine if, and where, differences exist compared to those ageing without a disability.

It is possible to age successfully in spite of having a disability

In the first study of its kind, this research not only explicitly examined whether participants in Study One considered themselves to be ageing successfully, but then followed this up by validating and quantifying the results in Study Two. Previous research exploring successful ageing in those ageing with a disability (Molton & Yorkston, 2017) has been largely qualitative in nature and the research has lacked quantitative studies with large enough sample sizes to enable robust testing of hypotheses. This study sought to address these limitations by employing a mixed-
methods approach to explore not only whether individuals consider themselves to be ageing successfully, but also what contributes to successful ageing with a disability, and to determine whether similarities exist between those ageing with and without a disability. Study One employed a grounded theoretical approach as a means of exploring what it means to age successfully with a disability. In total 17 individuals who were experiencing post-polio syndrome (n = 9), or had incurred a spinal cord injury (n = 8) participated in the study. All the participants in Study One reported that in spite of the challenges they faced, they felt that they were ageing successfully. Furthermore, many of the elements identified as facilitating successful ageing echoed those identified in existing research with groups ageing without a disability (Iwamasa & Iwasaki, 2011; Rowe and Kahn, 1997; Strawbridge, Wallhagen, & Cohen, 2002), suggesting that from the lay perspective there are number of overlapping areas.

Study Two corroborated these results, as the mean scores on ageing success variable were above the midpoint of the scale for those ageing both with and without a disability. This finding indicates that both groups felt that they were ageing at least somewhat successfully. Further exploration of the data also revealed that while none of the participants ageing with a disability would be categorised as ageing successfully based on current successful ageing models including Rowe and Kahn’s (1997) model, only 19% rated their ageing success as negative or neutral. Likewise, for those ageing without a disability, 55% would also not be categorized as ageing successfully due to a range of health issues, yet only 6% rated their ageing success as negative or neutral. These findings contribute to the accumulating evidence of the mismatch between academic definitions and subjective assessments of older adults themselves. They also demonstrate that for the most part the presence of disease or disability has a minimal effect on subjective assessments of ageing success. Moreover, the results of Study Two reveal that the factors that contribute to a sense of
ageing well are largely shared across those ageing with and without disabilities, suggesting that the process and determinants are likely to be similar regardless of disability status. Even when examining rankings of the importance of the factors, other than physical health, there was a surprisingly high level of concordance across the domains. Taken together, these findings have implications for the current conception and foundations of successful ageing. When initially proposed by Rowe and Kahn (1987), the prevailing research suggested that individuals ageing with a disability did so ‘pathologically’, and as such they were unable to age successfully. In the successive three decades, however, as medical and healthcare procedures and knowledge have grown, so too has the life expectancy of those ageing with a disability (Kemp, 2005). The findings of this research suggest those who are ageing with a disability have much in common with those ageing without a disability. In this study, participants aging with a disability considered themselves to be ageing successfully, despite limitations in objective measures of physical functioning.

**Satisfaction with physical health is more important than the presence or not of a disability**

A review of core attributes of successful ageing by Cosco, Prina, Perales, Stephan, and Brayne (2014) found that over 90% of the studies included physiological constructs, such as, physical functioning and the absence of disease or disability, as core constructs of successful ageing. While this stance reflects the prevailing objective viewpoint, it has long been argued that the current conception of successful ageing does not adequately represent an individual’s own experience and subjective ratings of their ageing success (Strawbridge, Wallhagen, & Cohen, 2002). To date, however, research has largely focused on the additional factors that may be missing from the model rather than examining some of its underlying assumptions.
Using a mixed-methods approach, this study demonstrated that the physical health domain is more nuanced and less rigid than previously thought.

Participants in Study One considered that physical health was important, yet most reported that despite chronic pain and physical limitations, their quality of life remained high, as did their sense of aging successfully. It was clear that aging successfully often involved looking after physical health, including conscious adaptation and the development of strategies to actively protect and maintain existing abilities. In fact, participants described a process not unlike that proposed by Baltes and Baltes (1990) in their theory of Selective Optimisation with Compensation. These findings were extended by those of Study Two, which revealed that, although the absence of physical health conditions was rated as more important for those ageing without a disability, relative to those ageing with a disability, when an individual’s physical functioning and health status was analysed using a hierarchical multiple regression, neither current physical or mental functioning, nor the number of health conditions explained variance in subjective successful ageing scores for either group. Importantly, this result held in spite of the finding that the more health conditions a participant reported the worse their physical and mental health functioning. In fact, of all the health variables tested, only satisfaction with physical health was found to be a predictor of successful ageing.

In spite of these findings, it is likely that physical health or at least satisfaction with one’s own health status remains among the most important of the domains identified in this model. As noted, although participants in both studies essentially discounted the current academic definition of physical health for successful ageing, participants in Study One did discuss the need to look after their health. This is an important finding as Rowe and Kahn’s model was initially developed as a means of
differentiating the factors that help adults age successfully from those associated with disease, noting the important roles of environment and behavior in determining risk for disease in later life (Rowe & Kahn, 1997). Participants in our study supported many of the assertions made by Rowe and Kahn in their initial article, as evidenced by participants’ frequent comments on health related issues such as the importance of exercise, diet, and activities to maintain physical functioning. It therefore appears that participants in this study support the importance of health behaviours as advocated by Rowe and Kahn, but reject the limitation the definition of successful ageing imposes.

**Individuals ageing successfully with a disability use Selective Optimisation with Compensation (SOC) strategies to offset limitations**

This study also extends the current literature by clearly demonstrating that SOC strategies (Baltes & Baltes, 1990) are useful in understanding how individuals ageing with a long-term disability age successfully. To date the research examining SOC in older adults with disabilities has been limited to those ageing into disability who are experiencing age-related declined such as those associated with osteoarthritis (Gignac, Cott, & Badley, 2002; von Faber, Bootsma–van der Wiel, van Exel, & et al., 2001). The qualitative interviews in Study One revealed that participants viewed success not only in terms of objective or subjective achievements (e.g., maintaining social connections and looking after physical health), but also as a process of adaption that emphasises gains rather than losses to ultimately facilitate a sense of wellbeing, in order to optimise their functioning. These findings extend the research of Molton and Yorkston (2017) by highlighting the processes involved. Participants in Study One for example, spoke of the need to remain flexible and self-aware, and to accept change and adapt routines, mindsets, and acknowledge new limitations as they aged so as not to exacerbate existing or create new problems. Processes of selection
were illustrated by participants when discussing becoming more discerning in their activities and adapting to new functional issues so as to continue to complete their most valued activities with declining energy resources. Furthermore, participants discussed the need to adapt and incorporate new mobility equipment into their lives to offset the impact of new physical limitations that emerged over time. Importantly, Study One also revealed that all participants had made, or were already considered making at least one adaptation to offset the accumulating limitations associated with their condition and the older participants reported using all three SOC strategies. This highlights the flexibility and resourcefulness evident in individuals ageing with a disability that enables them to adapting to new functional limitations that develop over time. Moreover, participants revealed the conscious planning and tenacity that assisted them to adapt and find new solutions to changing abilities.

The regression analyses conducted in Study Two provided additional validation for the importance of personal resources such as resilience, autonomy and a sense of control in assisting those ageing with and without a disability adapt and retain a sense of ageing well. Taken together, these findings not only extend the current literature, but also provide evidence as to the validity of Selective Optimisation with Compensation (SOC) as a means of retaining a sense of ageing well for those ageing with a disability.

Extending the concept of successful ageing to those ageing with a disability

A main aim of this research was to develop and test a revised multidimensional model of successful ageing that takes into account subjective perspectives to provide a more inclusive and holistic account of successful ageing that is appropriate to those who are ageing with a disability. The findings from Study One in relation to the domains identified as important to successful ageing with a disability were used as
the foundation for further analysis in Study Two. Participants in Study One described successful ageing with a long-standing disability in terms of a multidimensional construct that also reflected their perceived position within broader social, cultural and political systems and processes. Participants, for example, described how interactions between individual resources and wider political and social factors can exert a positive or negative influence on their ability to age successfully. This provides further evidence for the need to adopt a biopsychosocial perspective (Jopp et al, 2014; Reichstadt, Sengupta, Depp, Palinkas, & Jeste, 2010; Tesch-Römer & Wahl, 2017) in order to develop a more inclusive model of successful ageing that is relevant to those ageing with a disability.

A number of the domains and perspectives shared by participants in Study One intersect with the three pillars of the World Health Organisation’s Active Ageing Framework (i.e., health, participation and security). In contrast to earlier studies of successful ageing among those ageing without a disability (see Cosco, Prina, Perales, Stephan, & Brayne, 2014), participants in Study One revealed that for those ageing with a disability, a range of macrosocial, external influences (e.g., government policies, access to appropriate health and social services, safe and accessible environments, and societal openness and support) were also judged to influence an individual’s sense of ageing well. This was in addition to the personal or intrinsic factors identified in previous literature (Rowe & Kahn, 1997; Phelan, Anderson, LaCroix & Larson, 2004). While earlier research has suggested that these extrinsic and macrosocial factors may be particular to those ageing with a disability (Molton & Yorkston, 2017), Study Two used a survey methodology to test whether the new dimensions and insights gained in Study One were relevant to not only a broader cross-section of adults ageing with a disability, but also for those ageing without a disability. Findings revealed that both groups surveyed in Study Two rated all of the
domains identified in Study One as important, including resilience and adaption and autonomy and control which have previously only been reported in the disability literature (Molton & Yorkston, 2017). Additionally, the two new domains identified from Study One (e.g. fairness and respect and safety and security) were also rated either as equally or more important for those ageing without a disability relative to those ageing with a disability. This finding suggests that the preliminary model developed from Study One also has utility not only for those ageing with a disability, but also for those ageing without a disability.

When looking at the rank order of importance of the different domains a number of similarities were also observed, as well as a number of differences (see Table 12.) For example, the importance of being able to maintain control over decisions was ranked highest for those ageing with a disability, whereas it was ranked fourth by those ageing without a disability. Although the domains may be relevant to both those ageing with and without a disability, different weightings are likely to apply on an individual, group and cultural level, perhaps based on an individual’s experiences to date (Clarke & Latham, 2014). Similar findings have been reported in studies drawing on the WHO active ageing framework (Abrams, Russell, Vauclair, & Swift, 2011; Vauclair, Hanke, Huang, & Abrams, 2016). In these studies, cultural and gender differences in attitudes toward ageing were found to influence the importance and expression of the different domains. The current study extends these findings by revealing that disability status also influences the importance assigned to different domains. Moreover, it could be suggested that any model of successful ageing needs to remain flexible enough to account for individual perspectives and adaptations over time. For example, retaining a sense of autonomy is potentially only perceived to be less important for those ageing without a disability (who perhaps take it for granted at
younger ages) until such time as their health and abilities start to decline (Ekdahl, Andersson, Wirenn, & Fredrichsen, 2011).

Proposing a revised model of successful ageing

Participants in Study One described successful ageing with a long-standing disability in terms of a multidimensional construct comprising eight different domains. The domains encompassed; 1) Looking after physical health; 2) Retaining cognitive abilities; 3) Positive psychological resources; 4) Retaining a sense of independence and autonomy; 5) Social engagement and participation in community; 6) Retaining a sense of purpose; 7) Fairness, respect and recognition; and 8) Safety and security.

The preliminary model derived from Study One confirmed the physical, cognitive, psychological and social aspects of successful ageing described by previous multidimensional models (Iwamasa & Iwasaki, 2011; Molton & Yorkston, 2017; Phelan, Anderson, LaCroix, & Larson, 2004; Rowe and Kahn 1997). In addition, the preliminary model included two additional dimensions – fairness and respect and safety and security that have previously not been addressed in either qualitative or quantitative investigations of the concept of successful ageing. These components in particular reflect Study One participants’ perceived position within broader social, cultural and political systems and processes. For example, the safety and domain acknowledges participants’ stated need for accessible buildings, safe and inclusive environments, adequate income or financing to be able to purchase aids and equipment to compensate for reduced physical functioning over time as well as adequate stock of appropriate housing and or care facilities. Similarly, the fairness and respect domain addresses concerns that as a person ageing with a disability, their needs and concerns are overlooked. Participants spoke of the need for services to be
distributed fairly, perceiving themselves to often be a forgotten and marginalised segment of society.

The preliminary model developed in response to the findings of Study One positioned each of the above themes as separate, yet interrelated and interacting dimensions, each of which helps support an individual with a disability to age successfully. It was suggested that each dimension acted like a spoke in a wheel, protecting the hub and facilitating an individual’s sense of ageing successfully. Additionally, the positive extrinsic influences identified were depicted as an encompassing circle, or tyre that surrounds the wheel, potentially cushioning individuals from negative influences such as environmental deprivation, perceived discrimination, stress and social exclusion. Thus the preliminary model acknowledged that, in many cases, the ability to age successfully with a disability was not wholly dependent on the individual, but also required the availability of adequate resources such as quality health care, accessible and inclusive services, financial security and appropriate housing options and opportunities for social participation.

Study Two sought to test the utility of the preliminary model in a broader cross-section of adults ageing with a disability. The model was tested in participants ageing without a disability to determine if the new domains identified also demonstrated utility in this population. A series of hierarchical multiple regression analyses revealed that the importance of the factors did little to explain participants’ subjective ratings of their ageing success. Rather, an individual’s satisfaction with the various domains identified as important for ageing well was the strongest predictor of successful ageing. The final model in Study Two explained 40% of the variance in successful ageing scores for those ageing with a disability and 38% for those ageing
without a disability. While this revised model (see Figure 8 overleaf) accounts for a considerable amount of the variance in successful ageing scores, it is clear that there remains a significant portion of unexplained variance. Importantly, the regression and moderation analyses conducted for Study Two confirmed that although concerns in relation to fairness and respect were stronger for those ageing with a disability, they still contributed variance towards successful ageing scores for those ageing without a disability. Likewise, both groups rated accessible and appropriate housing and sufficient income as important to be able to age successfully. These findings provide evidence of a mismatch between academic definitions and those of lay individuals (Phelan, Anderson, LaCroix, & Larson, 2004) and that the current “successful ageing” criteria as posited by Rowe and Kahn (1997) do not adequately represent the factors considered important for ageing well with a disability as viewed by older persons themselves.
The importance of differences observed between stated attitudes and reality

Findings from the current study suggest a previously unreported mismatch between individuals’ explicit responses (i.e., reportable attitudes whose expression can be consciously controlled), and their implicit perspective (i.e., attitudes to which people do not initially have conscious access and whose activation cannot be controlled). For example, when asked face-to-face what is important, participants in both studies confirmed the importance of all factors, but when asked anonymously, a different pattern of responses emerged which appears to reflect the participant’s actual
evaluative judgement based on their personal circumstances. It is possible that this reflects differences between an individual’s socially learned associations that have accumulated over time (explicit attitudes) of what it means to age successfully, compared to their actual experience which is likely reflected in their implicit attitude (Rydell, McConnell, Mackie, & Strain, 2006). Of note, this study suggests that when asked what is important to them, participants are likely to provide the answers they believe cognitively make the most sense and apply to most people. However, further investigation and asking participants ‘how’ something affects them personally, reveals that they access inner reflections that include not only cognitive judgements, but also affective evaluations. Consequently, although most people will say that the absence of disability is the most important factor, in reality people are able to adapt and overcome many of these limitations and actually continue to perceive themselves as ageing successfully. In summary, these findings have implications for current academic models of successful ageing, providing evidence in support of the contention that the current conception of physical health as it applies to successful ageing is not only inappropriate for those ageing with a disability (Holstein & Minkler, 2003; Rudman, 2015; Stone, 2003), but also for those ageing without a disability.

Strengths and limitations of the study

One of the strengths of this study is that it used both qualitative and quantitative research designs in combination to explore the experience of ageing successfully. To date research in the field of successful ageing has predominantly focused on one or other research methodology to the exclusion of the other. This study is, to the best of the author’s knowledge, the first to combine the strengths of both qualitative and quantitative approaches to develop and test a model of successful ageing for those
ageing with a disability. By combining approaches that have differing strengths and limitations, this study was able to enhance what is known about successful ageing, and develop more valid results, as the strengths of one method were able to offset the limitations of the other method (Scandura & Williams, 2000). Consequently, the qualitative research study (Study One) was used for the purpose of theory development, while the second quantitative survey (Study Two) tested the predictions derived from the preliminary model to determine if the two results complemented and built upon one another. A key strength of this approach was that the researcher was able to achieve an improved understanding of the experience of ageing with a disability, including the positives and negatives. This understanding was critical in identifying the factors that subsequently influence an individual’s sense of ageing successfully and facilitated the interpretation of results from the second study, helping to elucidate both differences and similarities between the results of those ageing with and without a disability. Furthermore, and perhaps most importantly, using this approach meant that the researcher was able to highlight and test perspectives that have thus far been overlooked by research to date, for example the role physical health plays in achieving a sense of ageing successfully. Using a convergent triangulation approach also allowed the researcher to test that the developed model was strong enough to survive an initial round of empirical scrutiny (Turner, Cardinal, & Burton, 2016).

It is believed that this is the first research study to directly compare those ageing with and without a disability to see where differences and similarities exist. This approach was used to determine whether the concept of successful ageing could in fact be extended to those ageing with a disability. To date research investigating successful ageing has largely been undertaken separately with either healthy community dwelling adults (e.g., Strawbridge, Wallhagen & Cohen, 2002; Phelan,
Anderson, LaCroix, & Larson, 2004; Pruchno, Wilson-Genderson & Cartwright, 2010) or with participants ageing with a disability directly (e.g., Molton & Yorkston, 2017). While this approach has increased our understanding of the elements that interact with successful ageing in both cohorts, to date there have been no direct comparisons across cohorts which has limited our understanding not only of how successful ageing is defined by those ageing with a disability, but has also lead to some nuances in the results being missed.

While the study had considerable strengths, a number of limitations need to be acknowledged. Firstly, Study Two sought to compare successful ageing with and without a disability, and efforts were made to ensure that the two groups were geodemographically similar so that confounds could be avoided. However, as research has found that adults ageing with a disability will often begin experiencing age-related declines 15 to 20 years earlier than those ageing without a disability (Kemp & Mosqueda, 2004), it is possible that in matching the ages, we have introduced a different confound. Indeed, it may be that some of the differences in results reported in Study Two may be related to the similarities in chronological age between those ageing with and without a disability. A number of participants in Study One described ageing as being a leveller, noting that if people live long enough, they are all likely to experience some form a physical decline. Previous research has demonstrated that that the likelihood of being classed as ageing successfully diminishes with age, and that as older ‘normally ageing’ adults move into the oldest-old category (i.e., 80 or over), they are more likely to experience age-related disabilities (Baltes & Smith, 2003; Chou & Chi, 2002). Thus, although those ageing with a disability are likely to experience age-related declines earlier than those ageing normally (Kemp & Mosqueda, 2004), data from this study suggests that the process and perceptions of ageing may be the same albeit, on a slightly different timeline.
Secondly, although we had a large sample size overall, we were unable to explore with any degree of accuracy, any differences in successful ageing within different disability types in this study due to limited numbers within some of the groups. There were also a number of areas that we were unable to examine in-depth in this study. For example, although we asked participants about the importance of not having dementia and satisfaction with their memory, no objective measures of cognition were used to actually examine individual’s current level of cognitive functioning.

**Implications for policy and clinical practice**

From a policy perspective, the results of this research suggest that governments and societies need to investigate and invest in adequate services and interventions that are informed by a more nuanced and considered understanding of ageing, as proposed by the findings presented in this thesis. Future interventions and services must be aimed at supporting the entire ageing population, many of whom are likely to age with pre-existing disabilities and/or chronic conditions. This is important, because as population longevity increases, there is likely to be a greater demand for more integrated services, centred around providing more holistic and tailored support for the individual. Importantly, the size and complexity of this task should not be underestimated. Governments and taxpayers, for example, are naturally concerned about the potential cost of services and the potential for wastage and abuse (Breheny & Stephens, 2010; Foster & Walker, 2105). Future research should attempt to identify cost effective means of delivering more integrated solutions and services. Consideration should be given towards unmasking the hidden costs associated with maintaining the current status quo and the implications on existing primary and tertiary healthcare settings for example. It is possible despite this, additional pension
and or taxation reforms may also become necessary in the future to fund improvements in existing services. If this is to be successful however, the justification for any such changes will need to be palatable to the public. Thus, clear benefits will need to be communicated through the identification of integrated and holistic ageing solutions, solutions that are as desirable to the population as a whole as education and healthcare are now. Moreover, it is likely that this will only be achievable by providing solutions that maximise opportunities for all older adults to maintain a sense of ageing successfully.

The findings of the research presented in this thesis suggest that, in order to facilitate this sense of successful ageing, individuals require a coordinated approach tailored towards their needs (see Figure 8, pp. 270): a process not typically supported by the structures that exist today. Certainly it is suggested that reform is needed in the provision of aged care services and long-term disability funding. Participants in the studies included in this thesis, too often expressed frustration at the capabilities of existing services to meet their needs, finding them to be understaffed, underskilled and underfunded, leading to gaps in services or, in the worst case, neglect of residents. In the future, it is likely that age care services will be increasingly relied upon to provide support for residents ageing with a disability and it is essential, that as such, they have access to appropriate equipment and multidisciplinary teams of healthcare professionals. A major focus of gerontological and rehabilitation research should therefore be aimed at identifying and suggesting policies and programs that can assist older adults to age successfully, regardless of disability status. In undertaking this research though, it will be essential to involve older adults in the process. Mixed-methods approaches, taking into account the views and perspectives of older adults themselves, should be considered, to more accurately test and explore the factors that they themselves consider important for ageing successfully.
From a clinical perspective, it is also essential that person-centred practice becomes the standard for services. Healthcare providers should receive not only adequate training in relation to disabilities and their secondary complications, but also in relation to the experience of ageing with a disability. Participants in both studies included in this thesis concurred that being treated fairly and having their independence and autonomy respected were important aspects of ageing successfully. Participants from Study One described their frustration at feeling devalued and unheard by medical and allied health professionals, many of who knew little to nothing about their conditions, and who were uninterested in learning. This suggests that it may be important to examine current funding arrangements to ensure that sufficient time is allowed for consultations and for investigating how evidence-based research can be implemented in practice. Additionally, participants discussed their concerns in relation to having relationships and sexuality respected should they need to move into aged care accommodation in the future. This is an important capability to develop within these services as identity and sense of self are also often intricately intertwined within this.

Interventions that enhance sense of purpose will also be important areas to investigate. As acknowledged by Rowe and Kahn (2015), the positives of an ageing society are frequently overlooked. Certainly, the participants in Study One demonstrated that older adults, including those with long-term disabilities are fully capable of remaining productive and engaged either through paid or volunteer activities. Moreover, Study One participants also demonstrated that we have much to learn from adults ageing with disabilities that can point the way towards improved services and clinical interventions that can enhance the capacity for those ageing into disability to still retain a sense of ageing successfully. In the future societies should
strive towards recognising all the talent in the population, and not pre-judge others based on their age or disability status.

**Future research**

The model developed as part of our study, includes eight dimensions in addition to acknowledging the role of extrinsic macro-social influences, such as, access to government assistance, appropriate housing, adequate income, accessibility and the availability of opportunities to participate. Although the studies reported in this thesis suggest that this model has broad utility for those ageing with and without disabilities, future research should address the applicability of this model in a broader international cross-section of participants and with other minorities. In particular, initial analysis of Study Two responses suggests that group differences may exist in terms of the applicability of this model to individuals ageing with different types of disabilities. Although the preliminary findings are limited by sample size, and thus over-interpretation should be avoided, these represent an important area to explore in future research. A review of the literature certainly suggests that this has not yet been considered.

Data in relation to length of time living with a disability was not collected in Study Two and this too, will be an important area for future research as it may provide additional insights for rehabilitation researchers and offer suggestions for future interventions aimed at assisting those ageing with a disability do so successfully over the longer-term. For example, findings from this study suggest that a sense of purpose may exert a protective role on health and wellbeing for those ageing with a disability. As a cross-sectional study this research is unable to determine whether the possible protective role provided by a sense of purpose as demonstrated for participants in this study holds across the lifespan, or indeed varies
depending on the years lived with a disability. Longitudinal research exploring this relationship would be particularly useful for evaluating the relationship between sense of purpose, risk factors and the development and timing of age-related declines and/or secondary conditions. Longitudinal research would also add an important contribution to the disability literature it may also point towards future interventions that could be developed to maintain and enhance an individual’s sense of purpose as they age should it be found to provide a protective mechanism. Furthermore, research investigating the role of purpose in assisting older adults with a disability age successful will also help to bridge the gap between the disability and gerontology traditions.

Conclusion

This thesis contributes to the literature in a number of ways. Conceptually, the studies reported in this thesis build on that of Rowe and Kahn (1987, 1997), Baltes and Baltes (1990), Strawbridge, Wallhagen, and Cohen (2002), and Pruchno, Anderson, LaCroix, and Larson (2010), yet it presents a unique contribution to the successful ageing literature by extending the concept of successful ageing to those ageing with a disability. In particular, it demonstrates that the current conception of successful ageing as posited by academics perhaps reflects more of an external or outside point of view, rather than the internal reality for the individual themselves. Arguably, however, its central and most essential contribution to research is the evidence that ageing with a disability is not dissimilar to ageing without a disability, and that listening to the viewpoints and experience of those ageing with a disability will help to capture and build a model of successful ageing that is applicable beyond the relatively healthy young-old cohort.
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AGEING SUCCESSFULLY WITH A LONG-TERM DISABILITY


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Appendix A: Ethics Approval Letter - Study One

16 November 2015

A/Prof C.A. Bryant
Melbourne School of Psychological Sciences
The University of Melbourne

Dear A/Prof Bryant,

I am pleased to advise that the Behavioural and Social Sciences Human Ethics Sub-Committee has approved the following Project:

Project title: The secret of success: A mixed methods study exploring the experience of ageing well in a disabled population.

Researchers: A/Prof C A Bryant, Dr L Brown, N Heath

Ethics ID: 1545557

The Project has been approved for the period: 16-Nov-2015 to 31-Dec-2016

It is your responsibility to ensure that all people associated with the Project are made aware of what has actually been approved.

Research projects are normally approved to 31 December of the year of approval. Projects may be renewed yearly for up to a total of five years upon receipt of a satisfactory annual report. If a project is to continue beyond five years a new application will normally need to be submitted.

Please note that the following conditions apply to your approval. Failure to abide by these conditions may result in suspension or discontinuation of approval and/or disciplinary action.

(a) Limit of Approval: Approval is limited strictly to the research as submitted in your Project application.

(b) Variation to Project: Any subsequent variations or modifications you might wish to make to the Project must be notified formally to the Human Ethics Sub-Committee for further consideration and approval. If the Sub-Committee considers that the proposed changes are significant, you may be required to submit a new application for approval of the revised Project.

(c) Incidents or adverse effects: Researchers must report immediately to the Sub-Committee anything which might affect the ethical acceptance of the protocol including adverse effects on participants or unforeseen events that might affect continued ethical acceptability of the Project. Failure to do so may result in suspension or cancellation of approval.

(d) Monitoring: All projects are subject to monitoring at any time by the Human Research Ethics Committee.

(e) Annual Report: Please be aware that the Human Research Ethics Committee requires that researchers submit an annual report on each of their projects at the end of the year, or at the conclusion of a project if it continues for less than this time. Failure to submit an annual report will mean that ethics approval will lapse.

(f) Auditing: All projects may be subject to audit by members of the Sub-Committee.

If you have any queries on these matters, or require additional information, please contact me using the details below.

Please quote the ethics ID number and the title of the Project in any future correspondence.

On behalf of the Sub-Committee I wish you well in your research.

Yours sincerely,

[Signature]

Tony Callahan
Secretary, Behavioural and Social Sciences HESC
Phone: 8344 2067, Email: t.callahan@unimelb.edu.au

Research, Innovation & Commercialisation
Office for Research Ethics and Integrity
The University of Melbourne, Victoria 3010, Australia
T: +61 3 8344 1539 (internal), T: 40777 (internal), W: www.unimelb.edu.au
Research Study. The Secret of Success: Exploring the experience of ageing well with a disability or impairment

Would you like to help improve levels of understanding of what it means to age well with a disability or impairment and the supports that need to be in place to help people achieve this? 331 is currently supporting a Melbourne University PhD project that’s looking to do just that.

Older adults are now the fastest growing segment of the population. And as medical treatments improve, we are now seeing more people with differing levels of physical disabilities live beyond age 65.

Unfortunately, so far very little research has looked at how individuals with a long-term disability or impairment maintain a sense of ageing well, or the supports that need to be in place to help people achieve this. It is anticipated that this research can be used to develop effective interventions that can assist other people aging with a disability to age well over the long term.

The researchers are now looking for volunteers aged 50 – 80 who incurred a spinal cord injury 15 years or more ago and who are willing to share their experiences with a long-term disability or impairment.

As part of the study participants will be asked to take part in individual interviews, conducted either in your home or another convenient location.

If you’re interested in participating or finding out more, please contact Niki Heath:
T 0458 894 674
E nheath@student.unimelb.edu.au

Ageing well (with a disability)

Niki Heath, a psychology student, is looking for older Australians with a physical disability who may be interested in participating in a project exploring the meaning of ageing well with a disability or impairment.

As the world’s population ages, there has been a growing interest in understanding the positive aspects of older age as well as the obstacles that need to be overcome. This is important because, despite the increasing number of adults aging with an impairment or disability, very few studies have looked at what it means to age well and the supports that are needed to help achieve this.

The current study aims to give participants an opportunity to express their experiences of ageing well, but we also hope it will help identify areas that need to be improved in the future. Indeed, we hope that a better understanding of the meaning of a good old age can help to ensure that appropriate help and support are offered to older people.

We would love to hear from older adults who:
- Have post-polio syndrome or a spinal cord injury incurred more than 25 years ago
- Are currently aged between 50 and 70 years old
- Would like to share their thoughts about their ageing experiences
- Would like to help us understand the experience of ageing well with a disability or impairment

If you work with any clients who may be interested in participating in this study, and who meet the above criteria, please share this article with them.

For those interested, the process will include an individual interview which can be conducted either in your home or another convenient location. The interview will last about 45 – 60 minutes. For more information or to register to participate, call Niki Heath on 0458 894 674.

Got news?

Do you have a product you’d like to promote or news you’d like to share with your readers? Email us at adnews@indie.com.au.

PAGE 5
Appendix C: Plain Language Statement - Study One

Melbourne School of Psychological Sciences

Plain Language Statement

Project Title: The secret of success: exploring the experience of ageing well in a disabled population

Associate Professor Christina Bryant (Principal Researcher)
Tel: 8345 3906; email: cbryant@unimelb.edu.au

Mrs. Niki Heath (PhD student)  Dr. Laura Brown (co-researcher)
Email: nheath@student.unimelb.edu.au  Email: laurabrown@manchester.ac.uk

Introduction

We would like to invite you to take part in a project exploring the experience of ageing well with a long-term disability. Until now, very few studies have looked at the experience of ageing well with a pre-existing impairment. The current study therefore aims to increase our understanding of disabled peoples’ perceptions of what it means to age well. As part of this, the study will also explore the coping mechanisms and adaption processes used by older individuals with a disability as they relate to ageing. This is important because of the growing numbers of disabled older adults who may or may not have adequate support in place. We hope that a better understanding of what it means to age well with a disability can help to ensure that appropriate help and support are available to older people as they age and their needs change.

What will I be asked to do?

You will be invited to take part in a one-on-one individual semi-structured interview. The interview will take approximately 1 hour. Before the interview you will be asked to provide some basic information about yourself, such as your age, where you live, who you live with as well as brief information about your disability. The interview can be conducted either in a quiet room at the University of Melbourne, or in a quiet room in your own home. The interview will be audio-recorded so as to make sure that your comments are recorded accurately.
What are the risks?

Taking part in this study involves minimal risks such as getting tired from sitting for more than 30 minutes. You may request a break at any time if you are becoming uncomfortable or fatigued. The interview can also be split over 2 sessions if you prefer to reduce the risks of any discomfort. During the interview, you will be asked for your thoughts on various aspects of ageing, which sometimes may involve sharing your personal experience. If you feel upset or emotional after the interview, please don't hesitate to speak to the researcher for information about appropriate clinical resources or you can speak to the principal researcher who is a clinical psychologist with many years experience working with older adults. If necessary, the researcher will assist in contacting your GP, case worker or a local psychologist.

How will my confidentiality be protected?

We intend to protect your confidentiality as fully as possible, subject to legal limits. The interview data will be typed-up and stored in a password-protected database. In addition we will keep identifying information (your name, suburb and date of birth) in a separate password-protected file. The data will be kept for 5 years and will be deleted permanently thereafter. Only the researchers named on this form will have access to the password-protected file and database. Any and all information you provide, including your name, contact details and information shared during the interview will not be shared with Independence Australia or Spire (AQA Victoria). Additionally participation in this research will have no effect on your relationship with, or the services provided by Independence Australia and/or Spire (AQA Victoria).

Given that the study will be using individual interviews, complete anonymity may not be achievable in this study. Individual responses from interviews may be described in research reports, however all possible precautions will be taken to disguise your identity so that readers of the report will be unable to link you to the study.

What if I want to withdraw from the research?

Taking part in this research is completely voluntary. You are able to withdraw at any time and to withdraw any unprocessed data previously supplied. This research is completely independent and will have no effect on your relationship with, or the services provided by Independence Australia or Spire (AQA Victoria).

Where can I get more information?

If you have not understood any of this information please contact any of the researchers named above. This research has been approved by the Human Research Ethics Committee (HREC 1545557.2). If you have any concerns about this project please contact the Executive Officer, Human Research Ethics, The University of Melbourne (Tel: 8344 2073; Fax: 9347 6739).

How do I agree to participate?

If you wish to take part please read and sign the consent form that you will be given.
Appendix C: Consent Form - Study One

Melbourne School of Psychological Sciences

Consent form for persons participating in a research project

Project Title: The secret of success: exploring the experience of ageing well in a disabled population

Name of Participant: ____________________________

Name of Primary Researcher: Associate Professor Christina Bryant (University of Melbourne)

Name of Additional Researchers: Mrs Niki Heath (PhD Student, University of Melbourne)
Dr. Laura Brown (University of Manchester, UK)

1. I agree to take part in this project. The purpose of this research is to understand the experience of ageing well with a long-standing disability.
2. I understand that this project is for research purposes only and not for treatment.
3. I understand that for this project I will need to fill in a sheet giving basic information about myself and I will take part in a one-on-one semi-structured interview lasting up to 1 hour. The details of this have been explained in the Plain Language Statement, which I have been given a copy of to keep.
4. I understand that my interview will be audio-recorded. This recording will then be typed-up and I will have the opportunity to check the accuracy by providing my contact details on the back of this form.
5. I understand that there are minimal risks involved in taking part in this research project; however I recognise that during the interview I may share some personal experiences. If I feel upset during or after the interview, I will let the researchers know and I will be offered information on relevant clinical resources, or assistance in contacting my GP or a local psychologist.
6. My participation in this research is voluntary and I am free to withdraw from the project at any time without explanation or prejudice and to withdraw any unprocessed data I have provided. Withdrawing from the project will not affect my relationship with Independence Australia or Spire (AQA Victoria).
7. I have been told that the data from this research will be stored at the University of Melbourne and will be destroyed five years after the publication date of the results.
8. I have been advised that I can receive a copy of the final research results by providing my contact details on the back of this form.
9. I have been advised that the confidentiality of the information I provide will be safeguarded subject to any legal requirements; my data will be password-protected and accessible only by the named researchers. I understand that neither Independence Australia and/or Spire (AQA Victoria) will not have access to my information.
10. I understand that as the study uses individual interviews, it may not be possible to guarantee my anonymity.

HREC Number: 1545557.2 Version Number: 3 Date: 08.01.2016

PTO
11. I understand that after I sign and return this consent form, it will be kept by the researcher.

Participant signature: __________________________ Date: __________________________

Please send me:

☐ A copy of the typed-up transcript of my interview, which I will be able to check for accuracy.

☐ A copy of the final research results.

My contact details are as follows:

Email address: __________________________________________

or

Postal address: __________________________________________

_______________________________________________________

_______________________________________________________

_______________________________________________________

_______________________________________________________
Appendix E: Interview Guide - Study One

Interview Schedule

Please note that this is a semi-structured interview schedule and therefore some probing and clarifying questions will also be asked. As is common in qualitative research, the interview schedule will be refined via an iterative approach as the research progresses. In this schedule, the first set of questions are the main themes to explore, while the second set are the probing/clarifying questions.

1. Can you please tell me what ageing means to you?
2. Researchers have come up with the term “successful ageing” to refer to people who are ageing particularly well. What comes to mind when you hear that term?
   a. What sort of characteristics/experiences/capabilities do you think it implies?
   b. Are there any problems with the term?
   c. To what extent do you think it applies to someone ageing with a disability?
3. Do you think ageing well is the same as successful ageing? Can you explain your answer?
4. Thinking now of a person you consider to be ageing well, what is it about them that makes you think that?
   a. If not a disabled person: Do you think it’s possible for someone with a disability to age well, if so what would that look like?
5. Think of a person you don’t believe is ageing well, what is it about them that makes you think that?
6. How (well/successfully) do you think you’ve aged so far?
   a. What personal strengths do you think have helped you as you’ve aged?
   b. What obstacles or weaknesses have hindered you as you’ve aged?
7. What sorts of things are important to you in terms of ageing well?
   a. Are there any personal attributes you think help someone with a disability age well?
   b. What, if any, supports need to be in place to help someone with a disability age well?

Expansion/further exploration type questions

1. Can you give me a specific example of that?
2. Can you tell me more?
3. Can you expand on your answer?
4. Can you explain your answer?

Wrap up Questions

1. Do you have anything to add?
2. Is there anything I should have asked?
3. How did the interview feel for you?
Appendix F: Debriefing Statement - Study One

Melbourne School of Psychological Sciences

Debriefing Statement

PROJECT TITLE: The secret of success: exploring the experience of ageing well in a disabled population

Associate Professor Christina Bryant (Principal Researcher)
Tel: 8345 3906, Email: ccbryant@unimelb.edu.au

Mrs. Niki Heath (PhD student) email: nheath@student.unimelb.edu.au
Dr. Laura Brown (co-researcher) email: laura.brown@manchester.ac.uk

Thank you for participating in a project on the experience of ageing well with a long-term disability or impairment. This research aims to increase our understanding of what it means to age well and also looks at the coping mechanisms and adaptation processes used by older individuals with a disability as they relate to ageing. This is important because of the growing numbers of disabled older adults who may or may not have adequate support in place. We hope that a better understanding of what it means to age well with a disability can help to ensure that appropriate help and support are available to older people as they age and their needs change.

By agreeing to participate in this research you took part in a one-on-one semi-structured interview that lasted approximately 1 hour. The interview was audio-recorded so as to make sure that your comments are recorded accurately. Before the interview you were asked to provide some basic information about yourself, such as your age and where you live as well as brief information about your disability. During the interview, you were also asked for your thoughts on various aspects of ageing, which sometimes may have involved sharing your personal experience.

If relaying your personal experiences has been in any way upsetting and you continue to feel upset or emotional after the interview, please don’t hesitate to speak to the researcher for information about accessing appropriate clinical resources, a list of useful resources is also provided overleaf should you need it. You may also speak to the principal researcher (see details at the top of this page) who is a clinical psychologist with many years experience working with older adults. If necessary, the researchers will also assist you in contacting your GP, case worker or a local psychologist. If you are experiencing particularly heightened levels of distress you may also wish to contact Lifeline on 13 11 14, a free, 24-hour a day confidential crisis helpline.

Finally, we would like to thank you for your participation and reconfirm our commitment to research excellence. As such this, research has been cleared by the Human Research Ethics Committee (HREC 154337.1). If, however you have any concerns about this project or the manner in which this research has been conducted please contact the Executive Officer, Human Research Ethics, The University of Melbourne (Tel: 8344 2073; Fax: 9347 6739).
Getting help

We recognise that relating personal experiences can be upsetting at times and you may wish to consider accessing the following resources if required.

Counselling and Psychology Service, Independence Australia
Phone: 1300 704 456 or email psychology@independenceaustralia.com

Lifeline (24-hour crisis line)
Phone: 13 11 14

Beyond Blue (24-hour helpline)
1300 22 4636

MensLine Australia
1300 78 99 78
A telephone and online support, information and referral service, helping men to deal with relationship problems in a practical and effective way.

MindSpot Clinic
Phone: 1800 61 44 34 or visit their website at: mindspot.org.au
An online and telephone clinic providing free assessment and treatment services for Australian adults with anxiety or depression.

Online resources

mindhealthconnect.org.au
An innovative website dedicated to providing access to trusted, relevant mental health care services, online programs and resources.

Find a professional in your area
Visit: https://www.beyondblue.org.au/get-support/find-a-professional
Appendix G: Ethics Approval Letter - Study Two

04 August 2017

A/Prof C.A. Bryant
Melbourne School of Psychological Sciences
The University of Melbourne

Dear A/Prof Bryant,

I am pleased to advise that the Behavioural and Social Sciences Human Ethics Sub-Committee has approved the following Project:

Project title: The secret of success: what's important to ageing well
Researchers: Dr L Brown, A/Prof C A Bryant, N Heath
Effect ID: 1769885

The Project has been approved for the period: 04-Aug-2017 to 31-Dec-2017

It is your responsibility to ensure that all people associated with the Project are made aware of what has actually been approved.

Research projects are normally approved to 31 December of the year of approval. Projects may be renewed yearly for up to a total of five years upon receipt of a satisfactory annual report. If a project is to continue beyond five years a new application will normally need to be submitted.

Please note that the following conditions apply to your approval. Failure to abide by these conditions may result in suspension or discontinuation of approval and/or disciplinary action.

(a) Limit of Approval: Approval is limited strictly to the research as submitted in your Project application.

(b) Variation to Project: Any subsequent variations or modifications you might wish to make to the Project must be notified formally to the Human Ethics Sub-Committee for further consideration and approval. If the Sub-Committee considers that the proposed changes are significant, you may be required to submit a new application for approval of the revised Project.

(c) Incidents or adverse effects: Researchers must report immediately to the Sub-Committee anything which might affect the ethical acceptance of the protocol including adverse effects on participants or unforeseen events that might affect continued ethical acceptability of the Project. Failure to do so may result in suspension or cancelation of approval.

(d) Monitoring: All projects are subject to monitoring at any time by the Human Research Ethics Committee.

(e) Annual Report: Please be aware that the Human Research Ethics Committee requires that researchers submit an annual report on each of their projects at the end of the year, or at the conclusion of a project if it continues for less than this time. Failure to submit an annual report will mean that ethics approval will lapse.

(f) Auditing: All projects may be subject to audit by members of the Sub-Committee.

If you have any queries on these matters, or require additional information, please contact me using the details below.

Please quote the ethics ID number and the title of the Project in any future correspondence.

On behalf of the Sub-Committee I wish you well in your research.

Yours sincerely,

Mr Táin Callahan
Secretary, Behavioural and Social Sciences HESC
Phone: 8344 2067, Email: t.callahan@unimelb.edu.au

UNIVERSITY OF MELBOURNE

Research, Innovation & Commercialisation
Incorporating UniMelb Commercial Ltd and the School of Melbourne Custom Programs
The University of Melbourne, Victoria 3010, Australia
T: +61 3 8341 1620 (external)  T: 40777 (internal)  W: unimelb.edu.au/research
Appendix H: Copy of HIT Advertisements - Study Two

Recruitment Info for HIT1
Complete a research survey on aging well – individuals aged 50 or over with a physical disability
Requester: Niki Heath
HIT Expiration Date: 30 October 2017
Reward: AUD $1.50
Time Allotted: 60 minutes
Description: You will be asked a series of questions that require you to reflect on your experiences of aging, as well as on personal attributes that may impact your sense of aging well. It should take approximately 45 minutes to complete the survey.
Keywords: survey, aging, resilience, fairness, autonomy, health
Qualifications Required:
Adults with a physical disability aged 50 or above, with English language and computer skills sufficient for the completion of the online survey items are invited to participate in this research.

Recruitment Info for HIT2
Complete a research survey on aging well – individuals aged 50 or over
Requester: Niki Heath
HIT Expiration Date: 30 October 2017
Reward: AUD $1.50
Time Allotted: 60 minutes
Description: You will be asked a series of questions that require you to reflect on your experiences of aging, as well as on personal attributes that may impact your sense of aging well. It should take approximately 45 minutes to complete the survey.
Keywords: survey, aging, resilience, fairness, autonomy, health
Qualifications Required:
Adults aged 50 or above, with English language and computer skills sufficient for the completion of the online survey items are invited to participate in this research.
Appendix I: Plain Language Statement - Study Two

Melbourne School of Psychological Sciences

Plain Language Statement

Project Title: The secret of success: what’s important for aging well

Associate Professor Christina Bryant (Principal Researcher)
Tel: +613 8345 3906; email: cbryant@unimelb.edu.au

Mrs. Niki Heath (PhD student) Email: nheath@student.unimelb.edu.au
Dr. Laura Brown (co-researcher) Email: laura.brown@manchester.ac.uk

Introduction
We would like to invite you to participate in a project on aging well. This research aims to help us better understand the experience of aging well in a broad cross-section of adults. This is important because of the growing numbers of older adults who may or may not have adequate support in place.

What I would be asked to do?
You will be asked to participate in an online survey where you will be asked a series of questions that require you to reflect on your experiences of aging, as well as on personal attributes that may impact your sense of aging well. It should take approximately 45 minutes to complete the survey.

What are the risks?
There are limited risks involved in participating in this study such as getting tired from sitting for more than 30 minutes. You can pause and save your responses as you go so that you can complete it over a series of shorter episodes to reduce the risks of any discomfort. In completing the survey you will be asked for your thoughts on various aspects of life and aging, it is possible you may find some of these questions sensitive. If your mood is negatively affected by your participation in this research please contact a counselling service in your local area, a list of online counselling resources will also be provided at the end of the survey.

What are the benefits?
You will receive a payment of $1.50 payable into your Amazon Payments account after completion of this survey. In addition your responses may help us learn more about what it means to age successfully so that we can understand the help and support older people need as they age and their needs change. This research project is being conducted by the researchers named above and the results will form part of a PhD research thesis. It is also anticipated that peer reviewed journal
articles reporting these results will be developed in the future. This research is supported by an Australian Government Research Training Program (RTP) Scholarship.

**How would my confidentiality be protected?**
Your confidentiality will be protected subject to legal limitations. Importantly your survey answers will be stored in a password-protected electronic format that will be kept for 5 years and will be deleted permanently thereafter. Your data will only be used for this study and will not be used again in future research. Amazon Mechanical Turk does not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study.

**What if I want to withdraw from the Research?**
Your participation in this research is completely voluntary. You are free to withdraw at any time and to withdraw any unprocessed data previously supplied. As such you may decide not to take part in the research or exit the survey at any time without penalty. You are also free to decline to answer any particular question you do not wish to answer for any reason. This would have no effect on your relationship with any member of the School of Psychological Sciences. It would not affect your grades, assessment or any treatment that you would otherwise be eligible for.

**Where can I get further information?**
If you have not understood any of this information please contact any of the researchers listed above. This research project has been approved by the Human Research Ethics Committee of The University of Melbourne. If you have any concerns or complaints about the conduct of this research project, which you do not wish to discuss with the research team, you should contact the Manager, Human Research Ethics, Research Ethics and Integrity, University of Melbourne, VIC 3010, Australia. Tel: +61 3 8344 2073 or email: humanethics-complaints@unimelb.edu.au. All complaints will be treated confidentially. In any correspondence please provide the name of the research team or the name or ethics ID number of the research project.

**How do I agree to participate?**
If you wish to participate please read and sign the consent form that you will now be provided with.
Appendix J: Consent Form - Study Two

Melbourne School of Psychological Sciences

Consent form for persons participating in a research project

PROJECT TITLE:  The secret of success: what's important for aging well

Name of Responsible Researcher: Associate Professor Christina Bryant
Name of Additional Researchers: Mrs. Niki Heath (PhD student), Dr. Laura Brown (co-researcher)

1. I consent to participate in this project. The purpose of this research is to investigate the experience of aging well and some of the factors that may impact a person’s sense of aging well.

2. I understand that this project is for research purposes only and not for treatment.

3. In this project I will be required to do participate in an online survey where I will be asked a series of questions that require me to reflect on my experiences of aging, as well as on personal attributes that may impact my sense of aging well. The details of this have been explained in the Plain Language Statement which I have been given a copy to keep.

4. I understand that there are risks involved in participating in this research project. Specifically, I may get tired from sitting for more than 30 minutes. I will also be asked for my thoughts on various aspects of life and aging, it is possible that some of these questions may be sensitive. These risks have been minimized by allowing me to pause and save responses as I go so that I can complete it over a series of shorter episodes to reduce the risks of any discomfort. I also understand that if my mood is negatively affected by my participation in this research I can contact a counselling service in my local area or refer to the list of counselling resources that will be provided at the end of the survey.

6. My participation is voluntary and that I am free to withdraw from the project at any time without explanation or prejudice and to withdraw any unprocessed data I have provided. Withdrawing from the project will not affect my relationship with the Melbourne School of Psychological Sciences. Specifically, it will not affect any ongoing assessment/grades or treatment that I would otherwise be eligible for.

7. I have been informed that the data from this research will be stored at the University of Melbourne and will be destroyed after five years.

8. I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements; my data will be password protected and accessible only by the named researchers.

9. I understand that no identifying information will be retained or gathered by the researchers.

10. By clicking on the proceed button below I agree to participate in this research.

HREC Number : 17498885  Version Number: 1  Date: 20.07.17
Appendix K: Questionnaire for those Ageing with a Disability - Study Two

**Aging well with a disability**

**Intro Section**
Thank you for considering participating in our study. Please look over our Plain Language Statement and Consent Form before proceeding. Once you have read these, if you are happy to proceed, please click “Yes” below.

**Plain Language Statement**

**Consent**
I have viewed, read and understood the information provided in the above Consent Form and I am happy to proceed.

| Yes (1) | No (2) |

**Are you aged 50 or over?**

| Yes (1) | No (2) |

**Do you have a physical disability?**

| Yes (1) | No (2) |

Please confirm your primary diagnosis (select one only):

- Spinal Cord Injury (1)
- Post-polio Syndrome (2)
- MS (3)
- MND (4)
- Epilepsy (5)
- Type I Diabetes (6)
- Hearing or vision loss (7)
- Cerebral Palsy (8)
- Other (9)

---

**Section A: Successful aging research**
Thank you for your involvement in the survey. This is a confidential questionnaire so please ensure that you do not provide your name or any other comments that will make you identifiable. By completing this questionnaire you are consenting to take part in this research as explained in the Plain English Statement. The intention of this project is to investigate different aspects of aging successfully aging well.

Please read each question and response option carefully before answering the questions and make sure that you have provided an answer for every question.

How strongly do you agree or disagree with the statement...

<table>
<thead>
<tr>
<th>Strongly disagree (1)</th>
<th>Disagree (2)</th>
<th>Somewhat disagree (3)</th>
<th>Neither agree nor disagree (4)</th>
<th>Somewhat agree (5)</th>
<th>Agree (6)</th>
<th>Strongly agree (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am aging successfully (or aging well)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Section B: How important do you feel the following domains are to being able to age successfully?**

<table>
<thead>
<tr>
<th>Not at all important (1)</th>
<th>Slightly important (2)</th>
<th>Moderately important (3)</th>
<th>Very important (4)</th>
<th>Extremely important (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having no major physical health problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not having dementia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having enough money to meet your needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowing that your future housing needs are safe and secure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being treated with fairness and respect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being resilient</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having a positive attitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being able to make your own decisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having good social connections</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having a sense of purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section C: How satisfied are you with...?

<table>
<thead>
<tr>
<th></th>
<th>Extremely satisfied (1)</th>
<th>Somewhat satisfied (2)</th>
<th>Neither satisfied nor dissatisfied (3)</th>
<th>Somewhat dissatisfied (4)</th>
<th>Extremely dissatisfied (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your physical health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your ability to remember/retell information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your level of income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your housing situation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The way you are treated by others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your ability to deal with adversity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your ability to stay positive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your ability to make your own decisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your social connections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your sense of purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section D: Physical Health

In this section we are interested in learning more about your physical health and wellbeing...

We would like to better understand how well you are able to do your usual activities and how you rate your own health. To help us better understand these things about you, please complete this section about your general health. Please answer all the questions, remembering there are no right or wrong answers. If you are unsure about which response to give to a question, please choose the one that appears most appropriate.

Do you have any of the following conditions:

- Heart Disease (1)
- Stroke (2)
- Bronchitis (3)
- Cancer (4)
- Type 2 Diabetes (5)
- Asthma (6)
- Osteoporosis (7)
- Emphysema (8)
- Osteoarthritis (9)
- None of the above (10)

In general would you say your health is:

- Excellent (1)
- Very Good (2)
- Good (3)
- Fair (4)
- Poor (5)
The SF-12v2 is copyrighted material and as such has been excluded from this appendix by the author of this thesis.
**Section E: Resilience**

In this section we are interested in how you respond to challenges that you may encounter.

Please answer all the questions.

For each item, please click the description below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

<table>
<thead>
<tr>
<th></th>
<th>Not true at all (1)</th>
<th>Rarely true (2)</th>
<th>Sometimes true (3)</th>
<th>Often true (4)</th>
<th>True nearly all the time (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am able to adapt when changes occur</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Even when things look hopeless, I don’t give up</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>xxx xxxxxxx xxxxxxxxxx xxxxxx xxxxxxx</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>xxx xxxxxxx xxxxxxxxxx</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>xxx xxxxxxx xxxxxxxxxx</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>xxx xxxxxxx xxxxxxxxxx</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>xxx xxxxxxx xxxxxxxxxx</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>xxx xxxxxxx xxxxxxxxxx</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>xxx xxxxxxx xxxxxxxxxx</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>

*The Connor-Davidson Resilience Scale (CD-RISC-25) is copyrighted material and as such has been excluded from this appendix by the author of this thesis. However, with the kind permission of the scale authors, two sample items are shown for illustration purposes.*
Section F: Fairness and Respect

The Anticipatory Justice and Distributive Justice questionnaire is copyrighted material and as such has been excluded from this appendix by the author of this thesis.
The Anticipatory Justice and Distributive Justice questionnaire is copyrighted material and as such has been excluded from this appendix by the author of this thesis.
Section G: Attitudes towards ageing

The Attitudes to Aging – Short Form Questionnaire (AAQ-SF) is copyrighted material and as such has been excluded from this appendix by the author of this thesis.
Section H: Sense of purpose

In this section, we are interested in learning more about your psychological wellbeing...
The following set of questions deals with how you feel about yourself and your life. Please remember there are no right or wrong answers.

Please select the option that best describes your present agreement or disagreement with each statement. If you are unsure about which response to give to a question, please choose the one that appears most appropriate.

Please answer all the questions.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree (1)</th>
<th>Moderately disagree (2)</th>
<th>Slightly disagree (3)</th>
<th>Slightly agree (4)</th>
<th>Moderately agree (5)</th>
<th>Strongly agree (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy making plans for the future and working to make them a reality</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>My daily activities often seem trivial and unimportant to me</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The Ryff Psychological Wellbeing Scale is copyrighted material and as such has been included from the appendices of the scale author, two sample items are shown for illustration purposes.
Section I: Control and Autonomy

In this section we are interested in whether you feel empowered to make your own choices...

Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate.

Please indicate your agreement with the following statements:

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree (1)</th>
<th>Agree somewhat (2)</th>
<th>Agree a little (3)</th>
<th>Don't know (4)</th>
<th>Disagree a little (5)</th>
<th>Disagree somewhat (6)</th>
<th>Strongly disagree (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is little I can do to change the important things in my life</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I often feel helpless in dealing with the problems of life</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I can do just about anything I really set my mind to</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other people determine most of what I can and cannot do</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>What happens in my life is often beyond my control</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Section J: Please tell us a little about yourself

Your gender?
- Male (1)
- Female (2)
- Transgender (3)
- Other (5)
- Prefer not to say (4)

Your age (as at 3/6/17) ________________

How would you describe your income level?
- Wholly insufficient for my needs (1)
- Barely sufficient for my needs (2)
- Sufficient for my needs (3)
- Slightly more than sufficient for my needs (4)
- More than enough for my needs (5)

What is your main income source?
- Paid work (1)
- Disability benefits (2)
- Insurance benefits (3)
- Pension (4)
- Partner’s income (5)

Please tell us about your housing situation
- Own house outright (1)
- Mortgage (2)
- Renting (3)
- Public housing (4)
- Living with family (5)
- Aged care residence (6)

In which country do you normally live?
____________________________________________________________________
Appendix L: Debriefing Statement - Study Two

Melbourne School of Psychological Sciences

Debriefing Statement

PROJECT TITLE: The secret of success: what's important for aging well

Associate Professor Christina Bryant (Principal Researcher)
Tel: +613 8345 3906; Email: cbryant@unimelb.edu.au

Mrs. Niki Heath (PhD student) email: nheath@student.unimelb.edu.au
Dr. Laura Brown (co-researcher) email: laura.brown@manchester.ac.uk

Thank you for participating in a project on the experience of aging well. This research
aims to increase our understanding of what it means to age well and also looks at the
coping mechanisms and adaption processes used by older individuals as they relate to
aging. We hope that a better understanding of what it means to age well can help to ensure
that appropriate help and support are available to older people as they age and their needs
change.

By agreeing to participate in this research you completed an online survey that took
about 45 minutes. As part of this you were asked to provide some basic information about
yourself, such as your age and where you live as well as brief information about your health
and wellbeing. During the survey, you were also asked for your thoughts on various aspects
of aging, which sometimes may have involved sharing your personal experience.

If reflecting on your personal experiences has been in any way upsetting and you
continue to feel upset after the interview, a list of resources is provided below should you
need them.

Finally, we would like to thank you for your participation and reconfirm our commitment to
research excellence. This research has been cleared by the Human Research Ethics
Committee (HREC 17498885.1). If you have any concerns about this project, which you do
not wish to discuss with the research team, you should contact The Manager, Human
Research Ethics, Research and Integrity, University of Melbourne, VIC 3010, Australia. Tel:
+61 3 8344 2073 or email: humanethics-complaints@unimelb.edu.au. All complaints will be
treated confidentially. In any correspondence please provide the name of the research team
or the name or ethics ID number of the research project.
Getting help

We recognise that relating personal experiences can be upsetting at times and you may wish to consider accessing the following resources if required.

Australia

Lifeline (24-hour crisis line)
Phone: 13 11 14

Beyond Blue (24-hour helpline)
1300 22 4636

Online resources

For information and a range of US helpline phone numbers

For information and a range of UK helpline phone numbers
www.getselfhelp.co.uk/helplines.htm

Online Suicide Prevention Chats (Worldwide)
www.suicidestop.com/suicide_prevention_chat_online.html

mindhealthconnect.org.au
An innovative website dedicated to providing access to trusted, relevant mental health care services, online programs and resources.
Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:
Heath, Nicola Ann

Title:
Extending the concept of successful ageing to persons ageing with disabilities

Date:
2018

Persistent Link:
http://hdl.handle.net/11343/216744

File Description:
Redacted thesis

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