

# Social connectedness and self-perceived health of older adults in New Zealand

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## Abstract

The objective of this research was to explore social connectedness and associations with self-perceived health amongst older adults in New Zealand at a population level. The data for this analysis were derived from the 2016 Health and Lifestyle Survey, a nationally representative survey administered via face-to-face interviews. The findings from this analysis of 1,374 respondents, all of whom were over the age of 55 years, highlight that being female, belonging to older age groups (above 70 years), being employed full-time or part-time, connecting online with known people, considering cultural connections to be important and not feeling isolated from others are significantly and positively associated with positive self-perceived health. The findings underscore the resilience potential of older adults and importance of social connectedness for positive health and well-being. In addition, the findings reveal target areas that would benefit by intervention and support by health professionals and policy makers.

## KEYWORDS

connectedness, culture, older adults, population-based survey, public health, social capital, social connection

## 1 | INTRODUCTION

Social connectedness between humans is an innate need, and researchers have highlighted its importance for health, to prevent social isolation and delaying mortality (Holt-Lunstad et al., 2010). It is gaining popularity in recent decades and seen as crucial to reverse the deficit lens that portrays older people as victims to age-related health limitations, loneliness and social isolation by emphasising on older people's resourcefulness and agency to adjust to social environments

in later life (Register & Scharer, 2010). It also is recognised in public health globally as a key driver to individual and community resilience and well-being (Bennett, 2015; MacLeod et al., 2016). Individuals cultivate social connectedness over their lifetime, through socialising, social support and sense of belonging, the core elements of social connectedness (Frieling et al., 2018). Social connectedness is especially important for older adults because they transition through a complex life stage, which may negatively impact upon their social connections and, therefore, their well-being (OECD, 2019). Older

adults are at risk for social disconnectedness (Smith & Victor, 2019), which can lead to depression and a lack of social agency. To reduce the afore risk, public health policies warrant creating opportunities for social connectedness amongst older adults (World Health Organisation [WHO], 2019). Self-perceived health is a reliable measure of overall health, widely used by public health experts especially for older adults (Fayers & Sprangers, 2002). Understanding social connectedness and its influence on older adults' self-perceived health is crucial for well-informed public health policy. The diversity and vulnerability of New Zealand (NZ) older population warrants an exploration of social connectedness and associations with self-perceived health. Currently, we do not know much about social connectedness that occurs at a population level in this cohort within the NZ context. Therefore, this study was conducted to explore connectedness and associations with self-perceived health amongst New Zealanders aged 55 and above.

## 1.1 | Background

Social connections for all age groups are important; this is especially true for older adults (Holt-Lunstad et al., 2010) because they contribute to the development of social capital and are also protective of overall health. Being connected means being valued, acknowledged and supports holistic well-being and provides individuals with a sense of purpose (Haslam et al., 2015). In addition, connectedness is also related to prolonged life and supports mental health (Mountain, 2018). It is well recognised that to age successfully individuals need to have a sense of belonging, inclusion and love (Cramm & Nieboer, 2013; Mountain, 2018). However, little is known about how older adults connect with each other at a population level. Emerging research points to the importance of online connectivity (Hill et al., 2015; Khosravi et al., 2016) and that some older adults use online platforms and technology to socially connect (Challands et al., 2017), but it is not clear how many connect online, nor the reasons for doing so.

There are several complex issues that have significant impact on older adults' social connections; these include, amongst others, increased risk of co-morbid conditions with ageing and developmental transitions (Biggs, 2017; Cramm & Nieboer, 2013; Hill et al., 2015). There are intrinsic and extrinsic processes that older adults need to confront to age well and maintain social connections. The intrinsic processes include developmental achievements such as acceptance of life changes, a desire to contribute to society, transitioning to retirement and developing a sense of purpose in the life they have lived (Biggs, 2017; Cornwell et al., 2008). The extrinsic processes such as alterations to traditional values that determine familial responsibility<sup>1</sup> (Wiemers et al., 2017), socioeconomic status and access to healthcare also play a significant role in facilitating social connections (Cornwell et al., 2008). These dynamic contexts have the potential to complicate older people's lives and can negatively impact upon social connections. Although older adults might navigate these complexities, this is relatively an unexplored topic and rarely reflected in social policy for older adults, and it does not often infiltrate health promotion activities.

### What is known about this topic?

- Social connectedness in older adult populations is influenced by intrinsic and extrinsic factors.
- Social connectedness contributes to individual's social capital.
- Self-perceived health is a reliable indicator of overall health.

### What this paper adds?

- Connectedness among older adults can be defined as both social and cultural experiences in advanced age.
- Public health initiatives should focus on social interventions to maintain connectedness in older people, acknowledging cultural diversity and associated values.
- A sense of connection positively supports perceived health and well-being during older age. This research contributes to understanding how different types of connections can be used to support positive ageing through targeted initiatives and programmes.

One of the important outcomes of social connections is the development of social capital (Biggs, 2017). Social capital refers to the shared values and mutual trust amongst members of a particular community, which can influence how an individual experiences past and present events (Gray, 2009). Various countries and organisations invest heavily in the well-being of older adults through an emphasis of their social capital (Edwards et al., 2017). Although the potential value of social capital in improving the quality of life in older adults (Coll-Planas et al., 2017) is promising, the diversity of the population characteristics render the delivery and uptake of interventions complex and not generalisable. Despite such challenges, researchers continue to look at ways to invest in developing the social capital derived from older adults' health and well-being as it supports community resilience (Edwards et al., 2017; Murayama et al., 2013; Wind & Villalonga-Olives, 2019). These initiatives utilise a holistic approach by addressing issues such as continued employment past retirement age, independent living and schemes to prevent social isolation by ensuring older people within the community are connected with others. Further aspects of social capital focus on research of those who are isolated due to health or social circumstances and, therefore, most at risk of falling through the gaps (Mountain, 2018). Researchers have explored the potential for online programmes that promote older adults' connectedness (Challands et al., 2017), with results of one such programme producing promising outcomes indicating that virtual connectedness might be protective against the development of depression (Challands et al., 2017).

International and national public health initiatives to promote the health of older people are also growing. Some of which include a shift towards well-being in the recent years and initiatives such as Age Friendly Communities and Cities, Ageing in Place and the Healthy

Ageing Strategy (Beard et al., 2016; Sixsmith & Sixsmith, 2008; WHO, 2007). These programmes aim to increase access to amenities and provide opportunities for older people to socially engage in their communities. However, formal evaluations of these strategies and programmes are pending. Within the setting of NZ, in addition to the 'Age Friendly City' initiatives, the Minister for Seniors has released a nationwide strategy 'Better Later Life: He Oranga Kaumatua 2019–2034' (2019), aimed at ensuring 'older New Zealanders lead valued, connected and fulfilling lives' (p. 2).

There is limited research in an NZ context that provides insights into the social connectedness of older adults. An analysis of population-based surveys conducted by the Health Promotion Agency, NZ, highlighted that people who are retired have the greatest sense of life satisfaction when compared with other age groups (Kvalsvig, 2018). The report indicated that social isolation decreases with age and geographic deprivation does not impact perceptions of isolation. There is information about social isolation in older age suggesting that older people, in particular women, are isolated and depressed, with the most vulnerable groups being ethnic minorities (Wright-St Clair et al., 2017). A qualitative exploration of rural-dwelling people, over the age of 85 years, highlighted the importance of social connectedness, with participants regarding the physical environment as significant to enabling connections (Neville et al., 2018). Within NZ, the Indigenous people, Māori, have large social networks that expand from family members and maternal and paternal heritage and have close ties within the community; these social networks and structures are integral to well-being and mental health (Kumar & Oakley Browne, 2008). Research conducted with ethnic minority groups reveal that despite older adults from these groups wanting to contribute to the community, they encounter barriers (Nayar & Wright-St Clair, 2018). These qualitative studies provide insights into the experience of social connectedness, but little research has been done at a population level to explore connection and social capital for older adults in NZ.

Self-rated health is widely regarded as a reliable and subjective measurement of older adult health, integrating the physical, mental, social and functional aspects of an individual's health (Fayers & Sprangers, 2002; Lee & Burr, 2016; Wuorela et al., 2020). It is also a tool that is recommended to aid health professionals and policy makers implement health promotion programmes. In NZ, government organisations such as Statistics New Zealand and Health Promotion Agency employ self-rated health as an indicator of population well-being to inform social and health policy. In this research, we aimed to examine social connectedness and associations with self-perceived health for the older adult population in NZ.

## 2 | METHODS

### 2.1 | Study design and setting

We employed secondary data analysis of a subset of the population, extracted from the 2016 Health and Lifestyle Survey (HLS) dataset.

This is a biennial survey carried out by an NZ Government Agency, the Health Promotion Agency. The nationally representative survey was administered using an NZ Census mesh-block sampling frame and a complex sample design. Ethics approval for the original survey was granted by the NZ ethics committee in May 2016. The methodology of this survey and the ethical approval process have been reported in the *2016 Health and Lifestyles Survey: Methodology Report* (Health Promotion Agency, 2017).

### 2.2 | Study sample

The original survey dataset had a total sample of 4,233 resident civilians aged 15 years and above, living in permanent private dwellings in NZ. They were interviewed face to face by trained interviewers between 5 May and 7 December 2016. For this study, we included the data only from the respondents aged 55 years and above.

### 2.3 | Measures

The original survey addressed several measures of health and lifestyle from which authors KMH and PS selected the measures that were relevant to this study.

The primary outcome of interest was self-perceived health, which was measured using the question 'In general, would you say that your health is excellent, very good, good, fair and poor?'. The responses were categorised as positive and negative. The outcome variables that were relevant to the core elements of social connectedness (Frieling et al., 2018) were identified. The variables relevant to *socialising* included 'if they try to see family and friends they don't live with', 'how they connected online with people they know in the last 7 days' and 'if they had a main meal together'. The variables relevant to *social support* included 'whether they could rely on a friend or family member for support if needed' and 'who they lived with'. The variables relevant to *sense of belonging* included 'whether maintaining a strong connection to culture was important to them' and 'if they had felt isolated from others in the last 4 weeks'. Demographic variables included gender, age group, prioritised ethnicity (each survey respondent is assigned to a sole ethnic category in order of priority) and time spent in NZ. We also included explanatory variables: highest educational qualification, employment and socioeconomic deprivation (DEP). DEP was measured in deciles 1–10. This was collapsed into five groups owing to the very small number of respondents in the lowest deciles. For all other selected variables, multiple possibilities were collapsed into key groups.

### 2.4 | Data collection

The selected subset data were requested through a formal proposal to HPA, who provided the verified and de-identified data.

## 2.5 | Data analysis

Data analysis was performed using SAS Version 9.1 (SAS Institute). Bivariate associations between demographic characteristics, explanatory variables and connectedness with self-perceived health were not adjusted for confounders. A stepwise process was followed to identify the best subset of variables in the final model that examined multiple variable associations with self-perceived health. The HLS sampling method enabled us to examine the older adult population of NZ at a nationally representative level. Because the focus of this study was to examine associations between variables of interest, a weighted analysis was not applied.

## 3 | RESULTS

Of the 1,374 respondents, 82.4% reported positive self-perceived health (see Table 1). Of these respondents, 66.7% were women, with 83.7% reporting positive health. The age groups ranged from 55 to 80 years and above. These respondents identified themselves as Māori (17.8%), Pacific (8.2%), Asian (3.9%) and European/other (70.0%) with reported positive health of 83.7%, 80.5%, 83.3% and 82.2%, respectively. A major proportion (74.5%) were NZ born, with 9.7% arrived in NZ before 1971, 11.9% arrived before 2001 and 3.9% arrived in NZ after 2000 with reported positive health of 82.9%, 79.0%, 81.1% and 85.2%, respectively.

### 3.1 | Individual effects of demographic characteristics and connectedness with self-perceived health

#### 3.1.1 | Demographics

In this analysis, respondents who had no formal qualification (odds ratio [OR] 0.37; 95% confidence interval [CI] 0.22–0.61) or with secondary school qualification (OR 0.52; 95% CI 0.31–0.88) were significantly less likely than people with undergraduate/postgraduate degrees to report positive self-perceived health (Table 1). Respondents who reported they were looking for a job, or that they were a student, homemaker, beneficiary or retired, were significantly less likely (OR 0.30; 95% CI 0.20–0.45) than people in full-time employment to report positive self-perceived health. There were no significant differences between respondent groups with regard to gender, age group, ethnicity, socioeconomic deprivation and time spent in NZ.

#### 3.1.2 | Socialising

Active socialisation through online connectivity and trying to see family and friends had a positive influence on self-perceived health.

People who reported not connecting with people they knew online were significantly less likely (OR 0.43; 95% CI 0.32–0.57) than people who reported they connected with people they knew online to report positive self-perceived health. People who had a neutral response (OR 0.55; 95% CI 0.32–0.95) or disagreed that they tried to see family and friends they do not live with (OR 0.38; 95% CI 0.25–0.58) were significantly less likely than people who agreed that they tried to see family or friends they do not live with to report positive self-perceived health. Overall, most respondents who reported positive health said they frequently or always had a main meal together with members of the household. However, there was no significant difference between the groups.

#### 3.1.3 | Social support

Living in the same household with primary relations and having a friend or family to rely on in times of need proved to be beneficial for the study participants. Respondents who were living with their partner and family (OR 1.90; 95% CI 1.14–3.17) and those living with partners only (OR 1.84; 95% CI 1.34–2.53) were significantly more likely than respondents living alone to report positive self-perceived health. People who responded either neutrally (OR 0.49; 95% CI 0.24–0.10) or disagreed (OR 0.33; 95% CI 0.18–0.60) that they could rely on a friend or family member for support in times of need were significantly less likely than respondents who agreed that they could rely on a friend or family member for support in times of need to report positive self-perceived health.

#### 3.1.4 | Sense of belonging

Cultural connections and feeling belonged to others were positively associated with self-reported health. People who neither agreed or disagreed (OR 0.67; 95% CI 0.48–0.93) or disagreed (OR 0.62; 95% CI 0.42–0.92) that a strong connection to culture was important to them were significantly less likely than respondents who agreed to report positive self-perceived health. In comparison with people who did not feel isolated from others in the last 4 weeks, those who reported feeling isolated a little of the time (OR 0.46; 95% CI 0.31–0.67) were significantly less likely to report positive self-perceived health. This effect was more pronounced for respondents who reported feeling isolated some of the time (OR 0.22; 95% CI 0.14–0.33).

### 3.2 | Joint effects of demographic characteristics and social connectedness with self-perceived health

When the demographic characteristics and social connectedness variables were included in the multivariate regression model, males (OR 0.64; 95% CI 0.47–0.87) and respondents who reported

**TABLE 1** Bivariate associations between demographic characteristics and connectedness with perceived health status for older adults in NZ

	Total group		Perception of health = positive		OR	95% CI	p value
	N	N	N	%			
Gender							0.15
Female	779	652	83.7	1.00	-		
Male	595	480	80.7	0.81	0.62-1.07		
Age group (years)							0.21
55-64	544	458	84.2	1.00	-		
65-69	277	227	82.0	0.85	0.58-1.25		
70-74	192	163	84.9	1.06	0.67-1.68		
75-79	160	126	78.8	0.70	0.45-1.08		
80+	198	155	78.3	0.68	0.45-1.02		
Highest educational qualification							0.0004
No formal qualification	406	310	76.4	0.37	0.22-0.61		
Secondary school	373	306	82.1	0.52	0.31-0.88		
Other (non-specified)	13	10	76.9	0.38	0.10-1.49		
Trade certificate/professional/undergraduate	372	319	85.8	0.69	0.40-1.18		
Degree/postgraduate	205	184	89.8	1.00			
Employment							<0.0001
Full-time	354	325	91.8	1.00	-		
Part-time	148	135	91.21	0.93	0.47-1.84		
Other (looking for a job, student, homemaker, beneficiary and retired)	872	672	77.1	0.30	0.20-0.45		
Ethnic group							0.90
Māori	245	205	83.7	1.00	-		
Pacific	113	91	80.5	0.81	0.45-1.44		
Asian	54	45	83.3	0.98	0.44-2.15		
European	961	790	82.2	0.90	0.62-1.31		
Time spent in NZ							0.63
NZ born	1,023	848	82.9	1.00	-		
Arrived before 1971	133	105	79.0	0.77	0.50-1.21		
Arrived before 2001	164	133	81.1	0.89	0.58-1.35		
Arrived after 2000	54	46	85.2	1.19	0.55-2.56		
Deprivation							0.79
Deciles 1 and 2	92	78	84.8	1.00	-		
Deciles 3 and 4	154	126	81.8	0.81	0.40-1.63		
Deciles 5 and 6	264	223	84.5	0.98	0.51-1.89		
Deciles 7 and 8	326	268	82.2	0.83	0.44-1.57		
Deciles 9 and 10	526	427	81.2	0.77	0.42-1.42		
Socialising: Having a main meal together							0.22
Always	1,043	868	83.2	1.00	-		
Frequently	194	162	83.5	1.02	0.68-1.54		
Sometimes	78	58	74.4	0.59	0.34-0.10		
Almost never	37	29	78.4	0.73	0.33-1.63		
Socialising: Online connectivity							<0.0001
Do connect with people I know online in the last 7 days	878	764	87.0	1.00	-		
Do not connect with people I know online in the last 7 days	496	368	74.2	0.43	0.32-0.57		

(Continues)

TABLE 1 (Continued)

	Total group	Perception of health = positive		OR	95% CI	p value
	N	N	%			
Socialising: I make an effort to see family or friends I don't live with						
Agree	1,175	992	84.4	1.00	-	<0.0001
Neither agree or disagree	76	57	75.0	0.55	0.32-0.95	
Disagree	123	83	67.5	0.38	0.25-0.58	
Social support: Living with status						
Living alone	526	409	77.8	1.00	-	0.0013
Living with partner only	566	490	86.6	1.84	1.34-2.53	
Living with partner and family	153	133	86.9	1.90	1.14-3.17	
Living with family	115	91	79.1	1.09	0.66-1.78	
Living with other	12	9	75.0	0.86	0.23-3.22	
Social support: I can always rely on a friend or family member for support if needed						
Agree	1,287	1,074	83.5	1.00	-	0.0003
Neither agree nor disagree	38	27	71.05	0.49	0.24-0.10	
Disagree	48	30	62.5	0.33	0.18-0.60	
Sense of belonging: Maintaining a strong connection to my culture is important to me						
Agree	866	734	84.8	1.00	-	0.01
Neither agree or disagree	316	249	78.8	0.67	0.48-0.93	
Disagree	182	141	77.5	0.62	0.42-0.92	
Sense of belonging: Felt isolated from others in the last 4 weeks						
None of the time	1,082	934	86.3	1.00	-	<0.0001
A little of the time	175	130	74.3	0.46	0.31-0.67	
Some of the time	116	67	57.8	0.22	0.14-0.33	

Abbreviations: CI, confidence interval; NZ, New Zealand; OR, odds ratio.

they did not connect with people they knew online (OR 0.49; 95% CI 0.36-0.68) were significantly less likely to report positive self-perceived health (Table 2). Respondents of older age groups (70 and above) were significantly more likely to report positive health than the younger age groups. People in the 'other' employment category (looking for a job, student, homemaker, beneficiary and retired; OR 0.24; 95% CI 0.15-0.40) were significantly less likely to report positive health than those with full-time employment. In comparison with respondents who felt cultural connections were important to them, those who reported a neutral response (OR 0.61; 95% CI 0.43-0.87) and those who disagreed that maintaining a strong connection to their culture was important to them (OR 0.57; 95% CI 0.37-0.88) were significantly less likely to report positive health perception. In comparison with respondents who reported not feeling isolated, those who reported feeling isolated a little of the time (OR 0.44; 95% CI 0.29-0.65) were significantly less likely to report positive self-perceived health. In addition, those who reported feeling isolated some of the time (OR 0.24; 95% CI 0.15-0.37) were even more less likely to report positive self-perceived health.

## 4 | DISCUSSION

This secondary analysis of the 2016 HLS examined social connectedness and associations with self-perceived health for New Zealanders over the age of 55 years. It supports the notion that social connectedness and a supportive environment have positive associations with self-perceived health and that older New Zealanders are well connected. To our knowledge, this is the first population-based profiling of social connectedness amongst older adults in NZ. It is vital to examine these factors and their associations, because the older population is both growing rapidly and increasingly vulnerable to experiencing social disconnectedness, reduced social capital and resultant negative health outcomes (Smith & Victor, 2019).

Most findings of this study can be explained with the support of the life-course perspective (Settersten, 2002) that is widely used by social science researchers to understand human socialisation and coping in all stages of life. It explains how individuals navigate life transitions using their individual agency and networks and when life contexts and experiences could become opportunities and/or barriers.

**TABLE 2** Multiple variable associations with self-perceived health for older adults in New Zealand

	Model: Demographics, connectedness and self-perceived health		
	OR	95% CI	p value
Gender			0.004
Female	1.00		
Male	0.64	0.47–0.87	
Age group (years)			0.01
55–64	1.00		
65–69	1.23	0.80–1.89	
70–74	2.16	1.29–3.61	
75–79	1.77	1.07–2.95	
80+	1.93	1.19–3.12	
Employment			<0.0001
Full-time	1.00	–	
Part-time	0.77	0.38–1.56	
Other (looking for a job, student, homemaker, beneficiary and retired)	0.24	0.15–0.40	
Socialising: Online connectivity			<0.0001
Do connect with people I know online	1.00	–	
Do not connect with people I know online	0.49	0.36–0.68	
Sense of belonging: Maintaining a strong connection to my culture is important to me			0.004
Agree	1.00	–	
Neither agree or disagree	0.61	0.43–0.87	
Disagree	0.57	0.37–0.88	
Sense of belonging: Felt isolated from others in the last 4 weeks			<0.0001
None of the time	1.00	–	
A little of the time	0.44	0.29–0.65	
Some of the time	0.24	0.15–0.37	

Abbreviations: CI, confidence interval; OR, odds ratio.

Most social connectedness measures with optimistic responses were positively associated with self-perceived health. This is consistent with other evidence (Ermer & Proulx, 2018; Lee & Burr, 2016; Michalski et al., 2020). Primary relationships are paramount. Respondents who lived with their partners and families, or with partners only, had a similar positive association. In keeping with the life-course perspective, older adults create interdependent attachments with primary relations such as partner and family, which offer a degree of predictability and harmony, enabling navigation of life with companionship (Settersten, 2002).

Elements of connectedness, such as socialising through online connectivity, a sense of belonging through cultural connections and not feeling isolated, protected the older aged cohorts in the study from negative self-perceptions of their health status. This effect persisted when the analysis was adjusted for all confounding variables. This finding supports other evidence that older adults possess strong mental attributes such as resilience, optimism and adaptive coping and have potential to respond positively to health and well-being interventions despite physical limitations (MacLeod et al., 2016). It is contrary to the popular belief that social isolation is exacerbated in later life, and it also emphasises the need to focus public health interventions and research that could exploit the strengths of this population to address the barriers of staying connected.

Old age presents a challenging life transition for older adults who experience significant changes such as retirement, loss of loved ones and a loss of optimal health. In viewing the study findings through the life-course perspective, older adults are equipped with their previous experience, social skills and series of networks to restructure their approach to meet new needs and interest. Despite being challenging, significant changes in life transitions also offer opportunities to readjust and restructure (Cornwell et al., 2008; Settersten, 2002). On the other hand, significant life changes can negatively affect retirement, as does shrinking social contacts and widowhood, reducing quality relationships and further compromising social networks. These events also risk diminishing social capital, which is needed to navigate life transitions successfully (Biggs, 2017). Therefore, qualitative investigations to understand how older adults restructure and cope in later life are needed.

The gender difference highlighted by the multivariate model could be partly explained by the global lower life expectancy for men in comparison with women and the wide gender gap noted in developed countries (Carmel, 2019) indicating that women tend to outlive men in older age. In NZ, men's average life expectancy at birth is 79.5 amongst women who have an average life expectancy of 83.2 (Statistics New Zealand, 2021). Also, factors influencing social connectedness and overall health perception could vary in different contexts for men and women, a concept supported by an Asian population-based study that reported gender differences and similarities in experience of social connectedness and loneliness that was partly mediated by their socioeconomic environment and social involvement (Takagi et al., 2020).

Being part of the labour force favours positive associations with self-perceived health for older adults in this study. Employment offers a structural context with opportunities to form and develop social networks and to access health- and well-being-related information. Engaging in meaningful work, be it in paid work or volunteering, exerts a positive influence on mental health (Maimaris et al., 2010) and improvement in life satisfaction (Baker et al., 2005) in older adults past retirement age. Participating in voluntary work and other civic engagements opens opportunities to form social connectedness, build social capital through expanded networks and thereby contribute to successful ageing (Douglas et al., 2017).

Maintaining connections with people online exerted a positive influence on self-perceived health for participants in this study. This finding is consistent with international studies on virtual connectedness (Challands et al., 2017; Cotten et al., 2013; Sinclair & Grieve, 2017) that report potential benefits by decreasing loneliness and increasing social contact and social capital amongst older adults. This information is vital for those planning health services, or public health initiatives, as people cannot expect virtual methods of connecting amongst all members in these age groups, particularly in light of the current pandemic, which has resulted in long-term isolation amongst some groups of older people.

Based on this study's participants, cultural connections were highly valued and had positive associations with self-perceived health, a conclusion also drawn by other researchers (Nayar & Wright-St Clair, 2018). Cultural connection provides additional richness to older people's lives by promoting a sense of belonging that is formed by identifying with a set of values and beliefs developed over a lifetime and supporting the individual's social capital. Associations with religious or cultural entities offer opportunities to create meaningful connections with others who have similar interests. However, multiple interpretations on what is important for individuals exist, along with differing contexts. For example, Indigenous people and those belonging to minority ethnic groups might differ in their interpretations from that of the mainstream culture; such cultural differences need to be accounted for when developing services. This information is valuable to health practitioners, as it highlights the importance of culturally appropriate care and provides guidance for referrals to community-based cultural support groups.

Participants who reported not feeling isolated from others scored positively in their self-perceived health; this highlights an important benefit of connectedness that can be capitalised on by public health experts to improve overall health (Fayers & Sprangers, 2002). A social network with direct relationships to people provides valuable resources for older adults and increases their chances of receiving support when in need (Cornwell et al., 2008); this is especially true when the contacts frequently interact with each other (Terhell et al., 2007). High-quality relationships are more likely to provide a sense of community and improve their self-esteem and well-being (Fiori et al., 2006). This evidence helps us assume that participants in this study might have had a reliable social network and high-quality relationships.

Overall, this research contributes to the evidence supporting the notion that social connectedness positively influences self-perceived health and is likely to improve overall well-being. This secondary analysis of self-reported data aimed to describe social connectedness of older adults in the NZ general population and to identify associations with self-perceived health. The cross-sectional data make it challenging to develop definitive causal models, and hence, we did not focus on causal pathways. This study is also limited to the measures that were part of the survey. The survey did not include older adults in residential care or living rough. A large proportion of respondents were in the age group 55–65 years (42%); however, when considering Indigenous and ethnic minorities,

this age group is considered to represent older people (Robson et al., 2007; Waldon, 2004). This research does not provide the rich narratives that qualitative research might extract; however, it provides insights that can be explored in future research. The study findings are relatable to multicultural older adult cohorts in other comparable countries. Additional research is warranted to explore public health initiatives that could promote meaningful connections amongst the older adult cohorts; this includes examining barriers to social connectedness amongst vulnerable groups, examining the impact of online connections in reducing social disconnectedness and the evaluation of community-based initiatives that aim to include diverse cultural groups.

## 5 | CONCLUSION

This investigation has considered how social connectedness influences self-perceived health amongst adults over the age of 55 years. The findings reveal that social connectedness positively impacts perceptions of health and is likely to improve overall well-being. Social connections stem from different sources, such as community groups and online forums. Health practitioners can use this research to inform decisions about proactively referring older adults to pastimes that will support connection during key life transitions. Also, it provides further evidence to support public health initiatives, enabling the promotion of targeted health promotion programmes to further positive, and meaningful, connections amongst those over the age of 55 years.

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## AUTHOR CONTRIBUTION

PS, KMH, KVW and NG have been involved in the conception and design of the paper as well as interpretation of findings. PS and KMH performed data acquisition and analysis with support from NG. PS and KMH drafted and revised the manuscript, with critical revisions performed by KVW, JM and NG. All authors approved the final version of the manuscript.

## DATA AVAILABILITY STATEMENT

The primary data that were subject to secondary analysis for this study were requested from the Health Promotion Agency (HPA), New Zealand. Restrictions may apply to the availability of these data, which were used under the 'HPA Microdata licence agreement' for this study. Information on accessing HPA microdata is available at <https://www.hpa.org.nz/our-work/research/accessing-microdata>.

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## ENDNOTE

<sup>1</sup> Filial Piety is an issue for some ethnic groups, where parents are left alone without extended family support in close physical proximity, despite assuming social structures, such as being cared for by family in older age.

## REFERENCES

- Baker, L. A., Cahalin, L. P., Gerst, K., & Burr, J. A. (2005). Productive activities and subjective well-being among older adults: The influence of number of activities and time commitment. *Social Indicators Research*, 73(3), 431–458. <https://doi.org/10.1007/s11205-005-0805-6>
- Beard, J. R., Officer, A., de Carvalho, I. A., Sadana, R., Pot, A. M., Michel, J.-P., Lloyd-Sherlock, P., Epping-Jordan, J. A. E., Peeters, G. M. E. E. G., Mahanani, W. R., Thiyagarajan, J. A., & Chatterji, S. (2016). The World report on ageing and health: A policy framework for healthy ageing. *The Lancet*, 387(10033), 2145–2154. [https://doi.org/10.1016/S0140-6736\(15\)00516-4](https://doi.org/10.1016/S0140-6736(15)00516-4)
- Bennett, K. M. (2015). *Emotional and personal resilience through life*. Foresight: Government Office for Science.
- Biggs, S. (2017). *Negotiating ageing: Cultural adaptation to the prospect of a long life*. Routledge.
- Carmel, S. (2019). Health and well-being in late life: Gender differences worldwide. *Frontiers in Medicine*, 6(218). <https://doi.org/10.3389/fmed.2019.00218>
- Challands, K. G., Lacherez, P., & Obst, P. L. (2017). Does online social connectedness buffer risk of depression following driving cessation? An analysis of older drivers and ex-drivers. *Cyberpsychology, Behavior, and Social Networking*, 20(4), 232–237. <https://doi.org/10.1089/cyber.2016.0377>
- Coll-Planas, L., Nyqvist, F., Puig, T., Urrútia, G., Solà, I., & Monteserín, R. (2017). Social capital interventions targeting older people and their impact on health: A systematic review. *Journal of Epidemiology and Community Health*, 71(7), 663–672. <https://doi.org/10.1136/jech-2016-208131>
- Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, 73(2), 185–203. <https://doi.org/10.1177/000312240807300201>
- Cotten, S., Anderson, W., & McCullough, B. (2013). Impact of internet use on loneliness and contact with others among older adults: Cross-sectional analysis. *Journal of Medical Internet Research*, 15, e39. <https://doi.org/10.2196/jmir.2306>
- Cramm, J. M., & Nieboer, A. P. (2013). Relationships between frailty, neighborhood security, social cohesion and sense of belonging among community-dwelling older people. *Geriatrics & Gerontology International*, 13(3), 759–763. <https://doi.org/10.1111/j.1447-0594.2012.00967.x>
- Douglas, H., Georgiou, A., & Westbrook, J. (2017). Social participation as an indicator of successful aging: An overview of concepts and their associations with health. *Australian Health Review*, 41(4), 455–462. <https://doi.org/10.1071/ah16038>
- Edwards, R. T., Spencer, L. H., Bryning, L., & Anthony, B. F. (2017). *Living well for longer: The economic argument for investing in the health and wellbeing of older people in Wales*. Centre for Health Economics and Medicines Evaluation.
- Ermer, A., & Proulx, C. (2018). Associations between social connectedness, emotional well-being, and self-rated health among older adults: Difference by relationship status. *Research on Aging*, 41, 336–361. <https://doi.org/10.1177/0164027518815260>
- Fayers, P. M., & Sprangers, M. A. (2002). Understanding self-rated health. *Lancet*, 359(9302), 187–188. [https://doi.org/10.1016/s0140-6736\(02\)07466-4](https://doi.org/10.1016/s0140-6736(02)07466-4)
- Fiori, K. L., Antonucci, T. C., & Cortina, K. S. (2006). Social network typologies and mental health among older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 61(1), P25–P32. <https://doi.org/10.1093/geronb/61.1.P25>
- Frieling, M., Peach, E. K., & Cording, J. (2018). *The Measurement of social connectedness and its relationship to wellbeing*. Ministry of Social Development.
- Gray, A. (2009). The social capital of older people. *Ageing and Society*, 29(1), 5–31. <https://doi.org/10.1017/S0144686X08007617>
- Haslam, C., Cruwys, T., Haslam, S. A., & Jetten, J. (2015). Social connectedness and health. *Encyclopaedia of Geropsychology*, 2015, 46–1. [https://doi.org/10.1007/978-981-287-080-3\\_46-2](https://doi.org/10.1007/978-981-287-080-3_46-2)
- Health Promotion Agency (HPA). (2017). *2016 health and lifestyles survey: Methodology report*. Health Promotion Agency. Retrieved from <http://www.hpa.org.nz/research-library/research-publications>
- Hill, R., Betts, L. R., & Gardner, S. E. (2015). Older adults' experiences and perceptions of digital technology: (Dis)empowerment, wellbeing, and inclusion. *Computers in Human Behavior*, 48, 415–423. <https://doi.org/10.1016/j.chb.2015.01.062>
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine*, 7(7), e1000316. <https://doi.org/10.1371/journal.pmed.1000316>
- Khosravi, P., Rezvani, A., & Wiewiora, A. (2016). The impact of technology on older adults' social isolation. *Computers in Human Behavior*, 63, 594–603. <https://doi.org/10.1016/j.chb.2016.05.092>
- Kumar, S., & Oakley Browne, M. A. (2008). Usefulness of the construct of social network to explain mental health service utilization by the Maori population in New Zealand. *Transcultural Psychiatry*, 45(3), 439–454. <https://doi.org/10.1177/1363461508094675>
- Kvalsvig, A. (2018). *Wellbeing and mental distress in aotearoa New Zealand: Snapshot 2016*. Health Promotion Agency.
- Lee, H., & Burr, J. (2016). Social connectedness and all-cause mortality: Focus on older adults' self-rated health appraisals. *Gerontologist*, 56(Suppl. 3), 656. <https://doi.org/10.1093/geront/gnw162.2667>
- MacLeod, S., Musich, S., Hawkins, K., Alsgaard, K., & Wicker, E. R. (2016). The impact of resilience among older adults. *Geriatric Nursing*, 37(4), 266–272. <https://doi.org/10.1016/j.gerinurse.2016.02.014>
- Maimaris, W., Hogan, H., & Lock, K. (2010). The impact of working beyond traditional retirement ages on mental health: Implications for public health and welfare policy. *Public Health Reviews*, 32(2), 532–548. <https://doi.org/10.1007/BF03391615>
- Michalski, C. A., Diemert, L. M., Helliwell, J. F., Goel, V., & Rosella, L. C. (2020). Relationship between sense of community belonging and self-rated health across life stages. *SSM – Population Health*, 12, 100676. <https://doi.org/10.1016/j.ssmph.2020.100676>
- Mountain, G. (2018). Social connectedness in older people: Who is responsible? *The Lancet Public Health*, 3(9), e412–e413. [https://doi.org/10.1016/S2468-2667\(18\)30159-2](https://doi.org/10.1016/S2468-2667(18)30159-2)
- Murayama, H., Kondo, K., & Fujiwara, Y. (2013). *Social capital interventions to promote healthy aging*. [https://doi.org/10.1007/978-1-4614-7464-7\\_9](https://doi.org/10.1007/978-1-4614-7464-7_9)
- Nayar, S., & Wright-St Clair, V. A. (2018). Strengthening community: Older Asian Immigrants' Contributions to New Zealand Society. *Journal of Cross-Cultural Gerontology*, 33(4), 355–368. <https://doi.org/10.1007/s10823-018-9357-5>
- Neville, S., Adams, J., Napier, S., Shannon, K., & Jackson, D. (2018). “Engaging in my rural community”: Perceptions of people aged 85

- years and over. *International Journal of Qualitative Studies on Health and Well-Being*, 13(1), 1503908. <https://doi.org/10.1080/17482631.2018.1503908>
- OECD. (2019). *The OECD measurement of social capital project and question databank*. Retrieved from <https://www.oecd.org/sdd/social-capital-project-and-question-databank.htm>
- Register, M. E., & Scharer, K. M. (2010). Connectedness in community-dwelling older adults. *Western Journal of Nursing Research*, 32(4), 462–479. <https://doi.org/10.1177/0193945909355997>
- Robson, B., Purdie, G., Cram, F., & Simmonds, S. (2007). Age standardization – An indigenous standard? *Emerging Themes in Epidemiology*, 4(1), 3. <https://doi.org/10.1186/1742-7622-4-3>
- Settersten, R. A. (2002). Socialization and the life course: New frontiers in theory and research. *Advances in Life Course Research*, 7, 13–40. [https://doi.org/10.1016/S1040-2608\(02\)80028-4](https://doi.org/10.1016/S1040-2608(02)80028-4)
- Sinclair, T. J., & Grieve, R. (2017). Facebook as a source of social connectedness in older adults. *Computers in Human Behavior*, 66, 363–369. <https://doi.org/10.1016/j.chb.2016.10.003>
- Sixsmith, A., & Sixsmith, J. (2008). Ageing in place in the United Kingdom. *Ageing International*, 32(3), 219–235. <https://doi.org/10.1007/s12126-008-9019-y>
- Smith, K. J., & Victor, C. (2019). Typologies of loneliness, living alone and social isolation, and their associations with physical and mental health. *Ageing & Society*, 39(8), 1709–1730. <https://doi.org/10.1017/S0144686X18000132>
- Statistics New Zealand. (2021). *Life expectancy at birth, total population by sex, 1950–52 to 2012–14*. Retrieved from <https://www.stats.govt.nz/topics/life-expectancy>
- Takagi, E., Saito, Y., & Chan, A. (2020). Gender differences in the association between social relationships and loneliness among older adults in Singapore. *Journal of Population Research*, 37(3), 243–263. <https://doi.org/10.1007/s12546-020-09242-0>
- Terhell, E. L., Broese van Groenou, M. I., & van Tilburg, T. (2007). Network contact changes in early and later postseparation years. *Social Networks*, 29(1), 11–24. <https://doi.org/10.1016/j.socnet.2005.11.006>
- Waldon, J. (2004). Oranga Kaumatua: Perceptions of health in older Maori people. *Social Policy Journal of New Zealand*, 23, 167–180.
- WHO. (2007). *Global age-friendly cities: A guide*. Retrieved from [https://www.who.int/ageing/age\\_friendly\\_cities\\_guide/en/](https://www.who.int/ageing/age_friendly_cities_guide/en/)
- Wiemers, E. E., Slanchev, V., McGarry, K., & Hotz, V. J. (2017). Living arrangements of mothers and their adult children over the life course. *Research on Aging*, 39(1), 111–134. <https://doi.org/10.1177/0164027516656138>
- Wind, T. R., & Villalonga-Olives, E. (2019). Social capital interventions in public health: Moving towards why social capital matters for health. *Journal of Epidemiology and Community Health*, 73(9), 793. <https://doi.org/10.1136/jech-2018-211576>
- World Health Organisation (WHO). (2019). *Age-friendly environments*. Retrieved from <https://www.who.int/ageing/age-friendly-environments/en/>
- Wright-St Clair, V. A., Neville, S., Forsyth, V., White, L., & Napier, S. (2017). Integrative review of older adult loneliness and social isolation in Aotearoa/New Zealand. *Australasian Journal on Ageing*, 36(2), 114–123. <https://doi.org/10.1111/ajag.12379>
- Wuorela, M., Lavonius, S., Salminen, M., Vahlberg, T., Viitanen, M., & Viikari, L. (2020). Self-rated health and objective health status as predictors of all-cause mortality among older people: A prospective study with a 5-, 10-, and 27-year follow-up. *BMC Geriatrics*, 20(1), 120. <https://doi.org/10.1186/s12877-020-01516-9>

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