Loneliness in Men 60 Years and Over: The Association With Purpose in Life

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Abstract

Loneliness as a consequence of getting older negatively impacts on the health and well-being of men as they age. Having a purpose in life may mitigate loneliness and therefore positively impact on health and well-being. Limited research into loneliness and purpose in life has been undertaken in older men. This study seeks to understand the relationship between loneliness and purpose in life in a group of older men. Using data from a cross-sectional survey of 614 men aged 60 years and over living in New Zealand, bivariate and multivariate analyses were undertaken to examine the relationship between loneliness and purpose in life using a range of demographic, health, and social connection variables. Bivariate analysis revealed that being unpartnered and having low socioeconomic status, limited social networks, low levels of participation, and mental health issues were associated with loneliness. Multivariate analysis showed that having poor mental health and lower purpose in life were indicators of loneliness. Consequently, improving mental health and purpose in life are likely to reduce loneliness in at-risk older men. As older men are a heterogeneous group from a variety of sociocultural and ethnic backgrounds, a multidimensional approach to any intervention initiatives needs to occur.

The global population is aging at rates never before experienced. The number of people in the 60 years and over age group is expected to reach approximately 2 billion by 2050 (United Nations, 2013) and the proportion of older men is also expected to increase. While this aging phenomenon reflects positive developments in medicine, public health, and economic factors, an ageist discourse posits older people as social, health, and economic burdens on society (Neville, Russell, Adams, & Jackson, 2016). While some commentators assert that additional social and health issues are to be expected from an increasing older population (Howard, Blakemore, & Bevis, 2017), others are less convinced. For example, Spijker and MacInnes (2013) caution making definitive assertions claiming an aging population will translate into, and is the sole reason for, increased social and health issues. The increase in these issues is also the result of other influences including advances in medical knowledge and technologies as well as an increase in chronic age-related conditions, particularly in those in the oldest–old (85 years and over) age groups (Spijker & MacInnes, 2013).

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Social isolation has serious health and well-being implications for older adults. A consequence of social isolation for older people is loneliness. Loneliness has been defined as "an aversive emotional state, experienced subjectively and related to a perceived deficiency in one's social or emotional relationships" (La Grow, Neville, Alpass, & Rodgers, 2012, p. 121). Two recent studies reporting rates of loneliness in older populations found small numbers (8%) reporting severe loneliness but more significant numbers (38%–44%) reporting moderate levels of loneliness (Dahlberg & McKee, 2014; La Grow et al., 2012).

While being alone can be a positive experience, being lonely has negative connotations. Loneliness and having limited social contacts has repeatedly been linked to negative health and well-being outcomes including increased risk of morbidity as well as physical, functional, and mental health issues (Luo, Hawkley, Waite, & Cacioppo, 2012; Tanskanen & Anttila, 2016). Research has shown that loneliness is a major precursor to depression in older adults (Beljouw et al., 2014), hypertension, reduced physical activity, increased likelihood of admission to a residential care facility, poor nutrition, and insomnia (Ong, Uchino, & Wethington, 2016). Frequently, these health-related issues are cumulative and create a negative trajectory of events that increase the risk of mortality in older adults.

There are several sociodemographic variables that are related to loneliness. First, older people are more likely to experience being lonely and this is particularly more noticeable in the oldest–old age group (85 years and over). This has been attributed to age-related factors such as death of a spouse and significant others leading to reduced opportunities to socialize (Penning, Liu, & Chou, 2014). The importance of having quality social connections with family and friends is well documented as alleviating loneliness (Cacioppo & Patrick, 2009; Cohen-Mansfield & Perach, 2015). Education and socioeconomic status are also linked to loneliness. A New Zealand study identified that well-educated older adults with high levels of retirement income reported lower levels of loneliness when compared to those in lower socioeconomic groups who were not tertiary educated (Stephens, Alpass, Towers, & Stevenson, 2011). Studies have also shown gender differences in rates of loneliness. A meta-analysis of studies focused on factors influencing loneliness demonstrated that older women, particularly those having lower socioeconomic status, were more likely to describe themselves as lonely when compared to men (Pinquart & Sorensen, 2001). However, older men who are lonely are more likely to be depressed and suicidal when compared to women (Zebhauser et al., 2014). There are multitudes of interventions available to address loneliness in older people including those that support the development of having a purpose or meaning in life.

Purpose and meaning in life are used interchangeably in the literature. Both purpose and meaning in life are founded on the philosophical work of Frankl (1958) who identified that people can develop a sense of purpose even when faced with significant adversity. A variety of definitions are available to describe purpose in life and these can be summarized as "the perception that one's previous and present life is useful and that one finds satisfaction in daily activities" (Pinquart, Silbereisen, & Frohlich, 2009, p. 253). Having a strong purpose in life is linked to feelings of well-being as well as an ability to cope with health- and social-related stressors (Chun, Heo, Lee, & Kim, 2016).

Several studies focusing on the connection between purpose in life and various health and well-being issues have been undertaken in older people generally. Research with people aged 85 years and over revealed that those who were ambivalent about their purpose in life identified lower psychological well-being (Hedberg, Gustafson, & Brulin, 2010). Other research has focused on purpose in life and physical health issues such as myocardial infarction (Kim, Sun, Park, Kubzansky, & Peterson, 2013), dementia (Boyle et al., 2012), cancer (Chun et al., 2016), and cerebral infarct (Yu et al., 2015). Each of these studies identified that having a purpose in their life improved treatment outcomes and quality of life in study participants.

A review of the literature identified only one contemporary published article on purpose in life in older men; however, this study did not focus specifically on loneliness. Findings from this research identified that older men are more at risk of social isolation when compared to women, and purpose in life was experienced when this group reminisced on the past particularly in relation to previous jobs they had worked in (Hedberg, Gustafson, Brulin, & Alex, 2013). Consequently, little research into loneliness and purpose in life in older men has been undertaken, and as such, this requires further investigation. The aim of the present study was to understand the relationship between loneliness and purpose in life in a cohort of older men and it seeks to answer the question "Is there a correlation between loneliness and purpose in life in older men?"

Method

STrengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement (Von Elm et al., 2007) was adhered to when developing and presenting the findings of this study. This study draws on data collected from the 2013 cohort of the longitudinal Health, Work and Retirement study (HWR). For a comprehensive overview and description of the methodological aspects of this longitudinal study, see Towers (2007). HWR is a

New Zealand longitudinal study examining the transition from work into retirement and the impact on health and well-being in older people over time (Stevenson, Stephens, & Alpass, 2015; Towers, 2007). Participants in the 2013 survey were those currently enrolled in the study and who had completed previous waves of the HWR. Participants had the option of completing a postal or on online survey, with the majority completing the postal version.

Of 3,282 participants who completed the baseline 2006 survey, 1,330 remained in the study in 2013 and completed surveys (40% retention rate). This cohort comprised of $n = 614$ males aged 60 years and over. There was also a deliberate oversampling of Māori (indigenous people of Aotearoa/New Zealand) to ensure that reporting of Māori data was meaningful and representative. Consequently, those who identified their ethnicity as Māori comprised 31% of this subsample ($n = 192$).

Measures

The measures used in the present study were included in a survey questionnaire designed to measure individual factors related to loneliness, purpose in life, social connectedness, volunteering, participation, Internet usage, physical and mental health variables, as well as demographic variables.

Loneliness. The 11-item De Jong Gierveld Loneliness Scale was used to measure social and emotional aspects of loneliness (de Jong Gierveld, van Groenou, Hoogendoorn, & Smit, 2009). Items are rated on a 3-point scale (anchored at $1 = no$, $2 = more \ or \ less$, and $3 = yes$). Sample items include "I experience a general sense of emptiness" (emotional loneliness) and "I can call on my friends whenever I need them" (reverse scored, social loneliness). A composite score of loneliness can be created by summing all item scores. Due to the non-normality of the loneliness scores, it was decided to dichotomize the loneliness scale utilizing the De Jong Gierveld cutoff of 2.0 (La Grow et al., 2012).

Purpose in life. Purpose in life was measured using six Likert scale items from the Life Engagement Test (LET) (Scheier et al., 2006), which assessed purpose in life by determining the extent to which people engaged in activities they found valuable and significant. The LET was tested on eight separate samples, one of which was men aged 47 to 90 years, (mean age = 70 years). Cronbach's α reliability test for the present sample was 0.74, which was consistent with the lower end of the range of Cronbach α scores found in the LET samples and equivalent to the normally accepted level of

reliability (0.7). A three-category variable was derived from the Purpose in Life 6-item 5-point scale (scores ranged from 6 to 21 out of a maximum possible score of 30, with a low score indicating a positive purpose in life and a high score a negative purpose in life) by dividing into a top quartile (5–7) and a bottom quartile (10–21), with the remaining half forming a middle category.

Social connectedness. Social connectedness data were collected over eight items covering number, type of relationship, type of contact, frequency of contact, and geographic distance. A summary social network-type variable was created by the original research team using the Wenger and Tucker (2002) classification of network types. The five types of network are local family dependent (mainly family); locally integrated (includes local family, friends, and neighbors); local self-contained (primarily neighbors); wider community focused (high focus on friends); and private restricted (no relatives, few local friends, and low community involvement; Stevenson et al., 2015).

Volunteering. Volunteering was measured over 12 items on a 7-point frequency scale from never to daily, which were combined into a continuous variable score and then collapsed into three levels: $1 = never$, $2 = occasionally$, and $3 = at \ least \ once \ a \ month$.

Participation. Participation was measured over 32 items on a 7-point frequency scale from never to daily, which were combined into a continuous variable score and split into three levels: low = *never* or *1–2 times a year*; mid = *quarterly to monthly*; and high = *weekly or daily*. These items were adapted from the New Zealand Enhancing Wellbeing in an Ageing Society study (Koopman-Boyden & Waldegrave, 2009). Examples of types of participation included watching sports, sports club participation, voluntary work, and gardening.

Internet usage. Internet usage was measured on a single-item 6-point frequency of use scale from never to daily.

Health. Physical and mental health were measured using the 12 items comprising the SF-12 (version 2) for physical and mental health, which were scored using normative subscale scores for an older New Zealand population and were derived from the 2006 wave of the Health, Work and Retirement survey and factor score coefficients derived from the 1996/97 New Zealand Health Survey (Ministry of Health, 1999), producing continuous variable scores that were then also presented categorized into quartiles with the following cutoff points: Mental Health 45.8, 51.6, 55.0; Physical Health 44.2, 52.2, 57.0.

Demographics. Demographics data collected included age, ethnicity, Māori descent, marital status, living arrangements, urban/rural location, education (highest qualification), employment status, and socioeconomic status (measured by the New Zealand Economic Living Standard Index [ELSI] index short form; Jensen, Spittal, & Krishnan, 2005). The cutoff points for the short form of the ELSI index are hardship (0–16), comfortable (17–24), and good (25–31).

Data Analysis

The IBM Statistical Package for the Social Sciences (SPSS) version 23 software package was used to analyze the data (IBM Corp, 2015). The first step in this study was to examine the representativeness of the study sample through comparison with population and assessment of attrition from the original sample on which this current survey was based.

Bivariate analysis. With loneliness as the dependent variable, the study examined bivariate relationships using binary logistic regression with each independent variable separately and odds ratio analysis to present the relative likelihood of loneliness in relation to differential values of each independent variable.

Multivariable analysis. Using a purposeful selection process (Bursac, Gauss, Williams, & Hosmer, 2008), variables with a significant relationship to loneliness of $p < .2$ in the bivariate analysis were selected for consideration for the multiple variable model. They were entered into a stepwise binary logistic regression, from which a resultant final model of the best subset of variables was produced.

Results

Sample Description

Table 1 provides a summary of the key characteristics of the sample. In addition, Figure 1 provides a graphical representation of the total loneliness scale for this population. The following analyses all utilized the categorization of the loneliness scale into dichotomous outcomes, lonely/not lonely.

Indicators of Loneliness

Bivariate analysis. We tested for associations with loneliness using the full range of demographic, health, and social connection variables in the study. To enter loneliness as the dependent variable in a binary logistic

Table 1. Sample Description of Men Aged 60 to 79 Years.

	N = 614
	%
Age	
60–64	24
65–69	35
70–74	29
75–79	12
Descent	
Maori	40
Non-Maori	60
Partnership/marriage	
Married/partnered	86
Divorced/separated	5
Widowed	4
Never married/single	5
Living arrangements	
Live alone	11
With spouse/partner	87
With others unrelated	2
Education	
No qualification	26
Secondary	21
Postsecondary/trade	31
Tertiary degree	22
Urban	82
In paid work (FT or PT)	44

Note. FT = full-time; PT = part-time.

regression, it was dichotomized into lonely (53%)/not lonely (47%). Results are shown in Table 2. Data were also well matched for Māori, employment, and urban status. Just over half (53%) reported being lonely, although only 5% reported they were severely lonely and 3% very severely lonely. The majority had locally based social networks, with 41% having a mixed network of family, neighbors, and friends, although one third relied mainly on neighbors. A further 20% had family or friends in the wider community. Only 6% had a "private restricted" network of no relatives, few local friends, and low community involvement. Regular Internet use was common, and all participated in at least 1 of 32 activities surveyed. One in five people never volunteered, but 66% volunteered at least once a month.

Variables showing significant association with loneliness at the bivariate level ($p < .05$) were partnership status, living arrangements, socioeconomic status, network type, participation, purpose in life, and mental health. Being lonely was more likely for those who were not partnered or not living with a partner, especially those living alone, and for those reporting economic
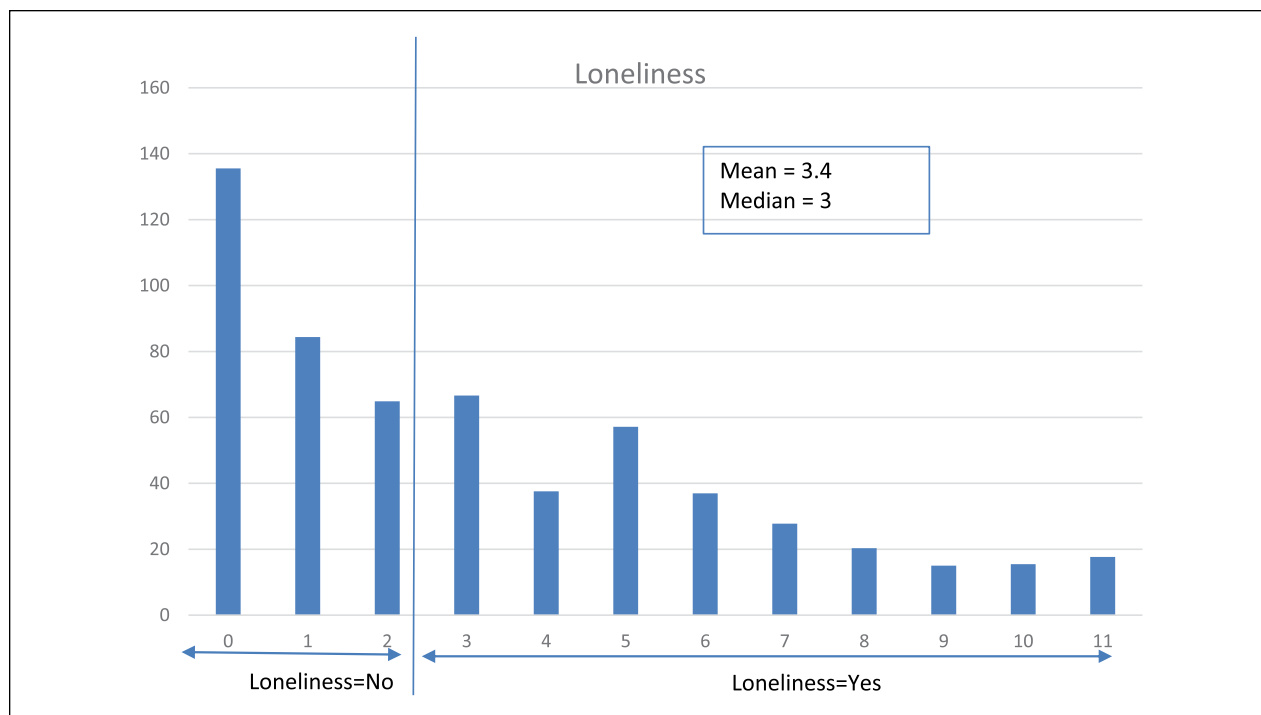
Figure I. Total loneliness scores.

hardship, poor mental health, the most restricted networks, low participation in activities, and the least purpose in life. For example, odds ratio analysis shows those with the most restricted social networks (no relatives, few local friends, and low community involvement) were three times as likely as those with the most integrated networks (includes family, friends, and neighbors) to be lonely with an odds ratio of 0.29 (95% CI [0.12, 0.72]) and twice as likely as those in other types of networks.

Those who were not partnered were twice as likely as those who were partnered to identify as lonely. Similarly those who lived alone were just over twice as likely as those who lived with a partner, odds ratio of 0.42 (95% CI [0.24, 0.74]), to report being lonely. This same group was also more likely to be lonely when compared to those who lived with people other than a partner with an odds ratio of 0.71 (95% CI [0.21, 2.37]). Those reporting the lowest levels of participation were twice as likely to experience loneliness, and those in greatest economic hardship were twice as likely as those who were "comfortable," odds ratio of 0.47 (95% CI [0.21, 1.09]), and three times as likely as those having "good" socioeconomic status, odds ratio of 0.29 (95% CI [0.13, 0.62]), to be lonely. As there are likely to be interrelationships between many of these variables, a multivariable analysis was carried out to determine which provided the best indication of loneliness.

Multivariable analysis. Independent variables in Table 2 with $p < .2$ were entered in a multivariable analysis using binary logistic regression. These were mental health, physical health, purpose in life, network type, marital status/partnership, living arrangements, socioeconomic status, and urban/rural location. Of these, only mental health and purpose in life variables remained in the final analysis, as presented in Table 3.

The results of our analyses show that having poorer mental health and lower purpose in life were associated with being lonely. As demonstrated in Table 3, there are decreased odds of loneliness from 0.39 to 0.12 with increasing mental health scores in comparison to the lowest quartile of mental health scores. In contrast, purpose in life shows a difference between negative purpose in life and neutral (odds ratio of 0.53 (95% CI [0.34, 0.84]) or positive purpose in life (odds ratio of 0.45 (95% CI [0.27, 0.77]). This was further validated by examining correlations between the underlying continuous scores for these key variables as shown in Table 4. Those with negative purpose in life have high rates of loneliness when compared to those with neutral or positive purpose in life.

Discussion

The current study sought to determine if there was a relationship between purpose in life and loneliness in a cohort of older men. The findings identify a significant and

Table 2. Bivariate Associations With Loneliness.

Independent variables	N (adjusted for Maori oversample)	% lonely (53% total sample)	Odds ratio	95% CI	*p* value
Demographic					
Age grouped					
60–64	149	52%	0.85	[0.48, 1.50]	.96
65–69	218	53%	0.91	[0.53, 1.55]	
70–74	175	53%	0.91	[0.52, 1.57]	
75–79	72	56%	1.00	–	
Partnership status					
Partnered	493	50%	0.46	[0.29, 0.72]	.001
Not partnered	121	69%	1.00	–	
Living arrangements					
With partner	490	50%	0.42	[0.24, 0.74]	.008
With others	17	64%	0.71	[0.21, 2.37]	
Alone	77	71%	1.00	–	
Education					
No qualifications	159	49%	0.69	[0.43, 1.09]	.36
Secondary	125	51%	0.74	[0.45, 1.20]	
Postsecondary	191	55%	0.89	[0.57, 1.39]	
Tertiary degree	134	58%	1.00	–	
Employment					
Employed	136	46%	0.74	[0.49, 1.13]	.38
Other	104	54%	0.56	[0.71, 1.41]	
Retired	228	51%	1.00	–	
Socioeconomic status					
Hardship	48	76%	1.00	–	.001
Comfortable	146	61%	0.47	[0.21, 1.09]	
Good	382	49%	0.29	[0.13, 0.63]	
Location					
Urban	501	54%	1.00	–	.20
Rural	110	48%	0.76	[0.51, 1.15]	
Ethnicity					
NZ European	380	52%	0.59	[0.31, 1.10]	.26
Maori	192	54%	0.62	[0.26, 1.47]	
Pacific	38	64%	1.00	–	
Health					
Mental					
Q1 poor	142	81%	1.00	–	<.001
Q2	142	61%	0.37	[0.21, 0.64]	
Q3	143	40%	0.15	[0.09, 0.27]	
Q4 very good	144	30%	0.10	[0.05, 0.17]	
Physical					
Q1 poor	144	59%	1.00	–	.08
Q2	143	56%	0.87	[0.54, 1.42]	
Q3	145	44%	0.56	[0.34, 0.90]	
Q4 very good	143	50%	0.69	[0.43, 1.11]	
Social connection					
Network type					
Family mainly	38	57%	0.47	[0.16, 1.38]	–
Integrated (F, N.F)	186	56%	0.29	[0.12, 0.72]	.05
Neighbors	151	47%	0.43	[0.17, 1.07]	
Friends	49	55%	0.48	[0.17, 1.30]	
Private/restricted	28	73%	1.00	–	

(continued)

Table 2. (continued)

Independent variables	N (adjusted for Maori oversample)	% lonely (53% total sample)	Odds ratio	95% CI	p value
Volunteer					
Never	222	56%	1.00	–	.44
Occasionally	153	54%	0.90	[0.56, 1.35]	
Regularly at least monthly	239	53%	0.78	[0.54, 1.14]	
Participation					
Low negative	171	64%	1.00	–	.003
Mid	168	51%	0.58	[0.38, 0.90]	
High positive	271	48%	0.51	[0.34, 0.75]	
Internet use					
Never	80	48%	0.76	[0.47, 1.23]	.53
Every few months	19	64%	1.47	[0.56, 3.88]	
Once a month	8	28%	0.32	[0.07, 1.52]	
Several a month	35	53%	0.93	[0.46, 1.87]	
Several a week	84	56%	1.05	[0.65, 1.70]	
Daily	352	55%	1.00	–	
Purpose in life					
Negative	178	71%	1.00	–	<.001
Mid	275	52%	0.44	[0.29, 0.66]	
Positive	161	38%	0.26	[0.16, 0.40]	

Note. CI = confidence interval; F = family; N.F = no family; NZ = New Zealand.
*p < .05.

Table 3. Multivariable Analysis for Best Indicators of Loneliness Using Binary Logistic Regression.

Independent variables	% lonely	Odds ratio	95% CI	p value
Mental health (quartiles)				
Q1 poor	81%	1.00	–	
Q2	61%	0.39	[0.22, 0.70]	
Q3	40%	0.19	[0.10, 0.33]	
Q4 good	30%	0.12	[0.07, 0.22]	<.001
PIL				
Negative PIL	71%	1.00	–	
Mid	52%	0.53	[0.34, 0.84]	
Positive PIL	38%	0.45	[0.27, 0.77]	.007

Note. CI = confidence interval; PIL = purpose in life.

Table 4. Spearman Correlation Between Full Scales of Loneliness, PIL, MH, and SES Measures.

	Loneliness	Purpose in life	Mental health	Socioeconomic status
Loneliness	1.00	−0.36	−0.49	−0.31
Purpose in life		1.00	0.43	0.27
Mental health			1.00	0.40
Socioeconomic status				1.00

Note. MH, mental health; PIL = purpose in life; SES = socioeconomic status.

interdependent association between low purpose in life, poor mental health, and loneliness. The results of this study suggest that improving mental health and purpose in life could contribute to reducing loneliness in older men, especially for those in the poorest or most negative categories. Due to the dearth of studies specifically

focusing on older men, loneliness, and purpose in life, our findings can only be discussed in relation to the general literature available.

Our findings are consistent with other studies that have found a negative correlation between loneliness and purpose in life, that is, a lower purpose in life is associated with experiencing greater loneliness (Bondevik & Skogstad, 2000). de Jong Gierveld, Keating, and Fast (2015) also found that self-reported mental and physical health, marital status, deprived living conditions, social network size and composition, and satisfaction with network contact were determinants of loneliness. In this study we found that purpose in life supported mental health and when it was not present was associated with loneliness.

Loneliness is a key theme in gerontological research and has been for some time now. In this study, low mental health scores were found to be associated with loneliness. This is also a well-known outcome in loneliness research including studies undertaken in older men (Alpass & Neville, 2003; Ong et al., 2016). Network type, the summary variable for social connectedness/isolation, was a significant variable related to loneliness at the bivariate level. Those participants with the most restricted networks were most likely to be lonely and those with the broadest, rather than just largest, networks were least lonely. This finding is pertinent to older men as previous research shows that men tend to have smaller social networks when compared to women and consequently are more likely to report loneliness (Bates & Taylor, 2012).

Analysis found that contact with significant others had the greatest association with loneliness when compared to other network type variables. However, the literature is inconsistent in reporting the importance of friends and family as a means to reducing loneliness. For example, Chen and Feeley (2014) found that quality contact and support received from partners or friends reduced loneliness, but not that from children or other family members. However, other studies have found the opposite and posit that active engagement and contact with family reduces mental health issues, particularly depression and loneliness (Bates & Taylor, 2012). This study found that those grandfathers who had little involvement with their grandchildren were more likely to report social isolation and loneliness than those who were socially engaged. de Jong Gierveld et al. (2015) found that feeling satisfied with the quality of social relationships is more important than network size. This finding may explain that contact with friends could be more important than contact with family as a determinant of loneliness.

Research by Hedberg et al. (2013), in a qualitative sample of older men ($N = 23$), claim that family, particularly children and grandchildren, positively influence purpose in life. However, the reality for many older people is that family members may not always live close by and as such, older people develop and rely on close friends/significant others to meet their social needs as well as to provide support. One of the very few studies focusing on loneliness and purpose in life in older adults found that religiousness and attending church ameliorated loneliness (Bondevik & Skogstad, 2000). Besides the spiritual aspect, attendance at church provides a place for older people to socialize and form new relationships, as well as promoting the opportunity for contemplation and reflection. These church-based benefits for older people are central to purpose in life and reducing loneliness as identified in the theoretical work of Frankl (1958), who asserts that being engaged in meaningful activities, thinking positively, reminiscence, and social engagement positively impact on psychological well-being.

Older men are a heterogeneous group; consequently, any interventions aimed at improving purpose in life and mental health and reducing loneliness should take account the different sociocultural contexts within which older men inhabit. For example, several studies identify social relationship-based interventions as useful to reducing loneliness (Krause, 2012; Masi, Chen, Hawkley, & Capcioppo, 2011). The Men's Shed movement is an example of a social intervention used to reduce loneliness, improve mental health, and give older men a sense of purpose in life (Mackenzie et al., 2017). However, participating with others at a Men's Shed event will only appeal to a particular group of men and will hold little or no interest to others. Studies have also shown a lack of evidence to support the utilization of gendered interventions such as Men's Sheds as benefiting the health and well-being of all older men (Milligan et al., 2016). A dynamic and multidimensional approach to developing a range of interventions that promote purpose in life and mental health, reduce loneliness, and are appropriate for a diverse range of older men is needed.

Several limitations should be noted. Although the sample was representative of Maori and Non-Maori participants, the findings may not be generalizable to all older men. As is common in surveys, not all older men from a variety of sociocultural groups may have been represented. For example, those at the lower end of socioeconomic spectrum did not take part in the study. Future research should include older men from a diverse range of sociocultural and ethnic groups including migrants. Second, due to the cross-sectional research design, causality cannot be determined. Finally, the findings rely on self-reporting of participant's ability to recall events related to loneliness and purpose in life. Self-reporting questionnaires are always at risk of potential bias; however, comparing data across other studies can help address this issue (Althubaiti, 2016).

Conclusion

The aim of this article was to understand the relationship between purpose in life and loneliness in older men. Although previous research has focused on loneliness, there are few studies published on purpose in life and loneliness in this group. The findings in this study identified that those men who scored low on the purpose in life scale were more likely to be lonely. In addition, those older men with mental health issues were also likely to score low on purpose in life contributing to being lonely. These findings are relevant to policy makers and social service providers who are interested in promoting purpose in life and social engagement to reduce loneliness among all groups of men.

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References

Alpass, F., & Neville, S. (2003). Loneliness, health and depression in older males. *Ageing & Mental Health*, *7*(3), 212–216. doi:10.1080/1360786031000101193

Althubaiti, A. (2016). Information bias in health research: Definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare*, *9*, 211–217. doi:10.2147/JMDH.S104807

Bates, J., & Taylor, A. (2012). Grandfather involvement and aging men's mental health. *American Journal of Men's Health*, *6*(3), 229–239. doi:10.1177/1557988311430249

Beljouw, I., van Exel, E., de Jong Gierveld, J., Comijs, H., Heerings, M., Stek, M., & van Marwijk, H. (2014). "Being all alone makes me sad": Loneliness in older adults with depressive symptoms. *International Psychogeriatrics*, *26*(9), 1541–1551. doi:10.1017/S1041610214000581

Bondevik, M., & Skogstad, A. (2000). Loneliness, religiousness, and purpose in life in the oldest old. *Journal of Religious Gerontology*, *11*(1), 5–21. doi:10.1300/J078v11n01_03

Boyle, P., Buchman, A., Wilson, R., Yu, L., Schneider, J., & Bennett, D. (2012). Effect of purpose in life on the relation between Alzheimer disease pathologic changes on cognitive function in advanced age. *Archives of General Psychiatry*, *69*(5), 499–505. doi:10.1001/archgenpsychiatry.2011.1487

Bursac, Z., Gauss, C., Williams, D., & Hosmer, D. (2008). Purposeful selection of variables in logistic regression. *Source Code for Biology and Medicine*, *3*, 17. doi:10.1186/1751-0473-3-17

Cacioppo, J., & Patrick, W. (2009). *Loneliness: Human nature and the need for social connection*. New York, NY: W. W. Norton & Company.

Chen, Y., & Feeley, T. (2014). Social support, social strain, loneliness, and well-being among older adults: An analysis of the health and retirement study. *Journal of Social and Personal Relationships*, *31*(2), 141–161. doi:10.1177/0265407513488728

Chun, S., Heo, J., Lee, S., & Kim, J. (2016). Leisure-related predictors on a sense of purpose in life among older adults with cancer. *Activities, Adaption & Aging*, *40*(3), 266–280. doi:10.1080/01924788.2016.1199517

Cohen-Mansfield, J., & Perach, R. (2015). Interventions for alleviating loneliness among older persons: A critical review. *American Journal of Health Promotion*, *29*(3), e109–e125. doi:10.4278/ajhp.130418-LIT-182

Dahlberg, L., & McKee, K. (2014). Correlates of social and emotional loneliness in older people: Evidence from an English community study. *Aging & Mental Health*, *18*(4), 504–514. doi:10.1080/13607863.2013.856863

de Jong Gierveld, J., van Groenou, M. B., Hoogendoorn, A., & Smit, J. (2009). Quality of marriages in later life and emotional and social loneliness. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *64B*(4), 497–506. doi:10.1093/geronb/gbn043

de Jong Gierveld, J., Keating, N., & Fast, J. (2015). Determinants of loneliness among older adults in Canada. *Canadian Journal on Aging/La Revue Canadienne du Vieillissement*, *34*(2), 125–136. doi:10.1017/S0714980815000070

Frankl, V. (1958). The will to meaning. *Journal of Pastoral Care*, *12*, 82–88.

Hedberg, P., Gustafson, Y., & Brulin, C. (2010). Purpose in life among men and women aged 85 years and older. *International Journal of Ageing and Human Development*, *70*(3), 313–229. doi:10.2190/AG.70.3.c

Hedberg, P., Gustafson, Y., Brulin, C., & Alex, L. (2013). Purpose in life among very old men. *Advances in Aging Research*, *2*(3), 100–105. doi:10.4236/aar.2013.23014

Howard, A., Blakemore, T., & Bevis, M. (2017). Older people as assets in disaster preparedness, response and recovery: Lessons from regional Australia. *Ageing & Society*, *37*(3), 517–536. doi:10.1017/S0144686X15001270

IBM Corp. (2015). *IBM SPSS statistics for windows, version 23.0*. Armonk, NY: IBM Corp.

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

Kim, E., Sun, J., Park, N., Kubzansky, L., & Peterson, C. (2013). Purpose in life and reduced risk of myocardial infarction among older U.S. adults with coronary heart disease: A two-year follow-up. *Journal of Behavioural Medicine*, *36*(2), 124–133. doi:10.1007/s10865-012-9406-4

Koopman-Boyden, P., & Waldegrave, C. (Eds.). (2009). *Enhancing wellbeing in an ageing society: 65–84 year old New Zealanders in 2007*. Hamilton: The Family Centre Social Policy Research Unit and Population Studies Centre, The University of Waikato. Retrieved from http://www.ewas.net.nz/Publications/index.html

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

La Grow, S., Neville, S., Alpass, F., & Rodgers, V. (2012). Loneliness and self-reported health among older persons in New Zealand. *Australasian Journal on Ageing*, *31*(2), 121–123. doi:10.1111/j.1741-6612.2011.00568.x

Luo, Y., Hawkley, L., Waite, L., & Cacioppo, J. (2012). Loneliness, health, and mortality in old age: A national longitudinal study. *Social Science & Medicine*, *74*(6), 907–914. doi:10.1016/j.socscimed.2011.11.028

Mackenzie, C., Roger, K., Robertson, S., Oliffe, J., Nurmi, M., & Urquhart, J. (2017). Counter and complicit masculine discourse among men's shed members. *American Journal of Men's Health*, *11*(4), 1224–1236. doi:10.1177/1557988316685618

Masi, C., Chen, H., Hawkley, L., & Cacioppo, J. (2011). A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review*, *15*(3), 219–266. doi:10.1177/1088868310377394

Milligan, C., Neary, D., Payne, S., Hanratty, B., Irwin, P., & Dowrick, C. (2016). Older men and social activity: A scoping review of men's sheds and other gendered interventions. *Ageing and Society*, *36*(5), 895–923. doi:10.1017/S0144686X14001524

Ministry of Health. (1999). *Taking the pulse: The 1996/97 New Zealand health survey*. Wellington: Ministry of Health.

Neville, S., Russell, J., Adams, J., & Jackson, D. (2016). Living at home and being socially connected at 95 years and beyond: A qualitative study. *Contemporary Nurse*, *52*(2–3), 258–268. doi:10.1080/10376178.2016.1205457

Ong, A., Uchino, B., & Wethington, E. (2016). Loneliness and health in older adults: A mini-review and synthesis. *Gerontology*, *62*(4), 443–449. doi:10.1159/00441651

Penning, M., Liu, G., & Chou, P. (2014). Measuring loneliness among middle-aged and older adults: The UCLA and de Jong Gierveld loneliness scales. *Social indicators Research*, *118*, 1147–1166. doi:10.1007/s11205-013-0461-1

Pinquart, M., & Sorensen, S. (2001). Influences on loneliness in older adults: A meta-analysis. *Basic and Applied Social Psychology*, *23*(4), 245–266. doi:10.1207/S15324834BASP2304_2

Pinquart, M., Silbereisen, R., & Frohlich, C. (2009). Life goals and purpose in life in cancer patients. *Support Care Cancer*, *17*, 253–259. doi:10.1007/s00520-008-0450-0

Scheier, M. F., Wrosch, C., Baum, A., Cohen, S., Martire, L. M., Matthews, K. A., … Zdaniuk, B. (2006). The life engagement test: Assessing purpose in life. *Journal of Behavioral Medicine*, *29*(3), 291–298. doi:10.1017/s10865-005-9044-1

Spijker, J., & MacInnes, J. (2013). Population ageing: The time-bomb that isn't? *BMJ*, *347*, f6598. doi:10.1136/bmj.f6598

Stephens, C., Alpass, F., Towers, A., & Stevenson, B. (2011). The effects of types of social networks, perceived social support, and loneliness on the health of older people: Accounting for the social context. *Journal of Aging and Health*, *23*(6), 887–911. doi:10.1177/0898264311400189

Stevenson, B., Stephens, C., & Alpass, F. (2015). *Inclusion, contribution and connection, summary report for the 2013 data wave of the health, work, and retirement study*. Palmerston North: Massey University.

Tanskanen, J., & Anttila, T. (2016). A prospective study of social isolation, loneliness, and mortality in Finland. *American Journal of Public Health*, *106*(11), 20142–2048. doi:10.2105/AJPH.2016.303431

Towers, A. (2007). *Methodology, summary report for the 2006 data wave of the health, work and retirement survey*. Palmerston North: Massey University.

United Nations. (2013). *World population ageing 2013*. New York, NY: United Nations.

Von Elm, E., Altman, D., Egger, M., Pocock, S., Gotzsche, P., & Vandenbroucke, J. (2007). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies. *Preventive Medicine*, *45*(4), 247–251. doi:10.1136/bmj.39335.541782.AD

Wenger, G., & Tucker, I. (2002). Using network variation in practice: Identification of support network type. *Health and Social Care in the Community*, *10*(1), 28–35. doi:10.1046/j.0966-0410.2001.00339.x

Yu, L., Boyle, P., Wilson, R., Levine, S., Schneider, J., & Bennett, D. (2015). Purpose in life and cerebral infarcts in community-dwelling older people. *Stroke*, *46*, 1071–1076. doi:10.1161/STROKEAHA.114.008010

Zebhauser, A., Hofmann-Xu, L., Baumert, J., Hafner, S., Lacruz, M., Emeny, R., … Ladwig, K. (2014). How much does it hurt to be lonely? Mental and physical differences between older men and women in the KORA-age study. *International Journal of Geriatric Psychiatry*, *29*(3), 245–252. doi:10.1002/gps.3998