

Is Australia experiencing an epidemic of loneliness?

Findings from 16 waves of the Household Income and Labour Dynamics of Australia Survey

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Relationships Australia

Acknowledgement

This report was prepared by Relationships Australia National to draw attention to the significant proportion of Australians who are experiencing loneliness, the topic of discussion at Relationships Australia's anniversary celebration in September 2018. The report will be used to assist Relationships Australia to develop policy and programs to improve our response to loneliness, a key priority for this year and beyond.

The author would like to acknowledge the contribution of the Commonwealth Department of Social Services in extracting the data that underpins this report, and for valuable comments and advice. I would also like to thank my colleagues at Relationships Australia National for their assistance and support.

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Introduction

Why is loneliness important to study

Social connection has been studied extensively, both in Australia and overseas, with authors now firmly agreeing about the importance of social connection in shaping wellbeing across the life span, particularly in later life. So important and fundamental is our need to belong, it has often been considered as central to human evolution, with group membership increasing the survival of the human species by encouraging our ancestors to coordinate activities that promoted advantages such as sharing and protecting food, shelter and resources (Baumeister & Learly, 1995).

It is therefore not surprising that deficits in experiences and feelings of belonging have been associated with a range of poor mental, physical and socio-economic outcomes for people, their families and communities. In a recent meta-analytical review of literature, people who are socially isolated or lonely are at risk of premature mortality at rates comparable with other well-established risk factors, including lack of physical activity, obesity, substance abuse, poor mental health, injury and violence (Holt-Lunstad, 2015). The research literature also identifies relationships between loneliness and poor mental health, including depression (Rubin & Mills, 1998; Nangle et. al., 2003), lower levels of self-worth (Qualter & Munn, 2002), life satisfaction (Goodwin, Cook, & Yung, 2001) and subjective wellbeing (Chipuer, Bramston & Pretty, 2003).

In studies of young people, social isolation and loneliness have consistently been associated with poor health outcomes. Pressman and colleagues (2005), for example, found small social networks were independently associated with poor immune response, while adolescents who do not have close friendships and good social networks consistently report lower levels of self-esteem, more psychological symptoms of maladjustment, and are at higher risk of suicide (Kidd, 2004). For older cohorts, loneliness has been found to be a predictor of functional decline and premature death (Perissinotto, 2012), with a lack of social connection carrying health risks equivalent to other known risky behaviours such as smoking 15 cigarettes a day (Valtorta, 2016b).

Differences between objective and subjective social isolation and loneliness

Social isolation, social connection and loneliness are often used interchangeably although it is widely understood that they capture highly related, but distinct concepts. Heinrich and Gullone (2006) describe loneliness as an exemplar of social relationship deficits, or a complex and unpleasant set of feelings that occur when an individual's intimate and social needs are not adequately met. Loneliness is considered a subjective experience and distinct from the objective state of being alone or socially isolated.

Social isolation can be marked by objective factors that include living alone, having few social network ties and infrequent social contact (Green et al., 2001; Holt-Lunstad et al., 2015). People who have poor or limited social contact are often considered 'at risk' of social isolation; however, an individual may have a small social network and experience no loneliness or have a large social network and still feel lonely.

Studies that differentiate between objective and subjective loneliness constructs (e.g. Cattan & White, 1998; Hall & Havens, 2001; van Baarsen et al., 2001) have defined social isolation as an objective measure of social interaction, and social and emotional loneliness as the subjective expression of dissatisfaction with a low number of social contacts. Other studies have combined loneliness constructs into a single definition. The study by Gardner and colleagues (1999), for example, defined people as socially isolated if they had poor or limited contact with others, they perceived this level of contact as inadequate, and/or that the limited contact had adverse personal consequences for them. Flood (2005) developed an Index of Social Support that did not differentiate between objective and subjective social and emotional loneliness. After conducting a factor analysis, he did not consider the 10-item scale collected by the Household Income and Labour Dynamics of Australia (HILDA) survey could be meaningfully divided, noting some of the items captured at least two different loneliness constructs.

There is some recent evidence, at least among older adults, that social and emotional isolation should be regarded as distinct dimensions of loneliness (Valtorta, 2016a; van Baarsen et al., 2001) as different types of social isolation may have different effects on our health. However, in their large meta-analysis of existing literature, Holt-Lunstad and colleagues (2015) found little difference in subjective and objective measures of social isolation and loneliness in predicting poor outcomes, our ultimate aim for this research in the future. Similarly, Andersson (1998) notes that while the strongest predictors may be subjective, there are objective indicators, such as living alone, that are also strongly associated with loneliness.

Prevalence

While the majority of people observed in studies measuring loneliness are not experiencing loneliness, across a range of Australian and International studies, there are a notable proportion of individuals who are lonely.

Research using data collected by the first 8 waves of the HILDA survey between 2001 and 2009 estimated that around 9 per cent of Australians report loneliness at any one time, with the number of people transitioning in and out of loneliness increasing over the period examined in the study (Baker, 2012). We note these prevalence rates are considered conservative (Baker, 2012; Franklin & Tranter, 2008) when compared to other Australian studies which found much higher rates of loneliness.

Loneliness has been found to be higher for specific groups. For example, in an online survey conducted by Lifeline Australia (2016), 60% of respondents reported that they often felt lonely, noting that these very high rates might be partially explained by the characteristics of the cohort of people accessing Lifeline's social media platforms. For older people living in the community, a range of prevalence rates have been estimated. In a Dutch study of older people living in the community aged 75 years and over by Savikko and colleagues (2005), for example, researchers observed loneliness rates of 39%, with rates of severe loneliness as high as 5%. In an Australian study of people aged over 65 years, severe loneliness was reported to be in the order of 7%–9%, depending on the measurement instrument used (Steed et. al., 2006), with the severest rates of loneliness reported by single participants, those who lived alone and those with lower self-rated assessments of their health.

Relationships Australia has previously explored aspects of loneliness in its monthly online survey. In January 2017, for example, more than 1,980 people responded to the survey, indicating high rates of loneliness for people accessing Relationships Australia websites (Relationships Australia, 2017). More than one-third (34%) of survey respondents reported that they often felt isolated and a further 43% reported they felt isolated some of the time.

Gender dimensions

The rates of loneliness across prevalence studies is also confounded by gender. While loneliness for men has been found to generally increase with age, loneliness for women generally decreases, although the relationship between age and loneliness reveals a number of complexities (Flood, 2005; Grenade & Boldy, 2008; Baker, 2012). Victor and colleagues (2006) argue that, although women are generally lonelier than men, once marital status, age and living arrangement are accounted for, the relationship between gender and loneliness often disappears.

Using a direct measure of loneliness, Jylha (2004) also found that women were more likely to report being lonely than men. However, when measures that avoid the word loneliness are used, gender differences are much less pronounced (Adams & Sanders, 2004). The study by Victor and colleagues (2006) provides a comparison of loneliness estimates for key demographic characteristics and discusses possible reasons for dissimilarities including differences in the socio-demographics of men and women as they age.

Ageing and relationships

In Australia, a number of demographic, health and social changes over the last century have resulted in both ageing of the population and increases in the complexity of family structures. In 1901, people aged over 65 years constituted a mere four per cent of the Australian population, whereas by 2017 over 1 in 7 people were aged 65 years and over (AIHW, 2018). These changes have promoted a growing interest in ageing-related relationship issues and their possible impacts on the health and wellbeing of Australian society.

In overseas studies focussing on elderly people, loneliness has been found to be more common among rural elderly people than those living in cities, and associated with advancing age, living alone or in a residential home, widowhood, low level of education and poor income (Savikko et. al., 2005). In addition, poor health status, poor functional status, poor vision and loss of hearing was found to increase the prevalence of loneliness (Savikko et. al., 2005; Victor et. al., 2006). Jylha (2004) identified common causes of loneliness for older people that included illness, the death of a spouse and a lack of friends. Based on risk factors identified in their research, Savikko and colleagues (2005) proposed that loneliness was both a result of societal life changes as well as from natural life events and hardships originating from aging.

It follows that while emotional closeness in close relationships generally increases with age (Charles & Piazza, 2007), ageing often decreases the number of significant social relationships and increases the number of social events that trigger significant disruptions to social ties (e.g. children leaving home, downsizing, death of a spouse, deteriorating health). As discussed briefly above, lifecycle changes due to ageing have varying impacts on men and women. Flood (2005) found women who live alone and those who live with others perceive very similar levels of support and friendship, however, while men are more likely to indicate a lack of social support than women, the difference is much greater in the case of men living alone.

Some experiences of loneliness might be explained by the ending of a relationship due to mortality, but increased loneliness due to relationship breakdown and differences in the nature of couple unions have also been observed. Franklin and Tranter (2011) found gender impacts to vary significantly with respect to the experience of loneliness in relation to marriage, separation, divorce and widowhood. While separated men and women were both more likely to be lonely, separated men were four times more likely than women to experience loneliness. People in de facto relationships were twice as likely to suffer loneliness than a married person; 2.2 times more likely to suffer loneliness more than once a week, and 1.7 times more likely to endure feeling lonely for longer periods.

Flood (2005) looked at temporal dimensions of separation, finding that while a divorce or separation at some time in the past does not seem to have an association with lower levels of support, recent separation or divorce is associated with increased loneliness. Flood's study found that men who live alone or as single fathers experience less social support, regardless of their prior experience of marriage, and proposed that in couple households, men rely on the direct support and social networks of their partners. If their relationship breaks down, men's levels of social support return to the low levels experienced by their single counterparts.

Protective factors

Flood (2005) identified a number of factors that act as buffers against loneliness, including social engagement in paid work, caring for others, and participation in clubs and sporting groups. Both men and women face a greater risk of social and emotional isolation if their financial situation has deteriorated or they have lost their jobs. This is particularly the case for married women, with a causal link between poverty and social isolation established for separated women (Eckhard, 2018).

Flood (2005) argues that men rely on paid employment as an important source of support and friendship, with levels of support and friendship rising as their participation in paid employment increases. Among women, working hours have little relationship with levels of social support, although for women living alone, there appears benefit from employment through greater levels of support and friendship. Lesser known is the causal links between these relationships—whether employment reduces loneliness or whether loneliness is a barrier to successfully participating in paid work.

Notwithstanding the associations described here, it is unlikely that any single type of relationship—family, workplace, social group or friendship—protects individuals from all dimensions of loneliness. It is probable that the human need for attachment is most likely satisfied by relationships with intimate partners and close family members, while reassurance of worth may be satisfied by meaningful relationships with co-workers. The need for social integration and connection may be best satisfied by a strong social network, and relationships contributing advice and guidance best provided by parental figures, mentors and teachers (Heinrich & Gullone 2006).

The purpose of this paper in examining relationships between loneliness and individual characteristics is three-fold. First, we update some elements of the prior work of Baker (2012) and Flood (2005) with almost a further decade of longitudinal information from the HILDA survey to provide contemporary estimates of the prevalence and persistence of loneliness. Second, we examine relationships between key demographics and loneliness using the Index of Social Support (ISS) following the approach of Flood (2005). We also isolate the direct question on emotional loneliness from the scale '*I often feel lonely*' to provide a comparison with the ISS and a test of its robustness. Third, we examine loneliness for men and women reporting in the most recent wave of published HILDA survey data (2016) across a period in the lifecycle from pre- to post-retirement ages to identify the possible impacts of demographic ageing on the prevalence of loneliness for the Australian population.

Method

The data used in this study were drawn from Waves 1 (2001) to 16 (2016) of the HILDA survey, a household-based panel survey described in detail by Wooden and Watson (2007). The HILDA survey is a broad social and economic survey established to support research in: household and family dynamics; income and welfare dynamics; and labour market dynamics. The survey began in 2001 with a large probability sample of Australian households occupying private dwellings, with members of the selected households who provided at least one interview in 2001 forming the panel that was pursued in each subsequent wave; a top-up sample was added in 2011. The large and nationally representative HILDA sample not only helps us more accurately estimate the loneliness prevalence rates at the national level, but also allows a more focused analysis on vulnerable groups, such as separated families and older people.

In this study, data from HILDA survey respondents was selected for analysis if the respondent completed the self-completion questionnaire which contained 10 questions relating to social support (see Appendix A for a full list). The first seven items of the social support scale are drawn from the 15-item Index of Perceived Social Support developed by Henderson and colleagues (1978), containing questions such as *'people don't come to visit me as often as I would like'*, while the last three items derive from the study by Marshall and Barnett (1993) which capture elements of functional social relationships such as *"when I need someone to help me out, I can usually find someone"*. There are five questions which are positively framed and five which are negative. Household, respondent and partner data were incorporated into each respondent's record. The final sample included 7,000 – 10,000 households (13,000 – 18,000 responding individuals) depending on the wave.

The research creates an Index of Social Support (ISS) following the approach of Flood (2005). The ISS captures elements of social and emotional loneliness, and social connection. Firstly, responses were re-coded on the five negatively-phrased statements so that a higher score on the seven-point scale indicates that the respondent perceives they have a higher degree of support. Responses were recoded so that the 'most lonely' response scored -3 and the 'least lonely' response scored +3. Finally, each person's responses were summed, potentially totally a score between a minimum of -30 to a maximum of 30. People with a negative score were considered to be lacking in social support.

One of the 10 questions specifically asks respondents whether they '*often feel very lonely*'. Values were recorded on a scale of 1-Strongly disagree to 7-Strongly agree, with values of 5-7 defined as lonely. This question is the only item that directly mentions loneliness. For comparison and to test the robustness of our analysis, we compare the ISS and the single item capturing emotional loneliness. It was also decided that comparing the two measures might help us gain insights into loneliness from different perspectives. For the remainder of the paper, a negative value on the ISS will be labelled 'social isolation' or 'a lack of social support' and these terms will be used interchangeably.

Population weights are provided in the HILDA data to correct for non-response and attrition and thus statistics representing estimates for the Australian population can be derived. In this research, (mostly) self-completion questionnaire, responding person, population weights were applied. Where longitudinal results are presented, responding person longitudinal weights were used. In the analysis of the persistence of loneliness, the research uses a balanced panel. The youngest respondents were aged 15 at the first wave (2001) and the oldest were aged 99 years at the last wave (2016).

In 2011, the HILDA survey included a top up sample to improve the national representativeness of the sample. Where results could be affected by the addition of new respondents (although the results that include the top-up sample are likely to be more accurate given they improve the representativeness and size of the sample), comparisons were made with and without the inclusion of the new respondents. No significant changes in results were observed.

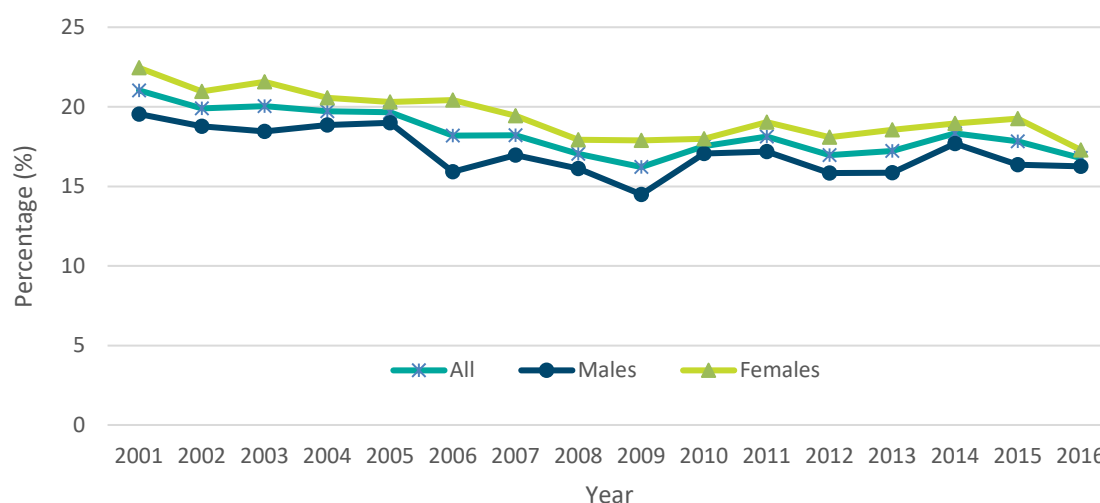
We were particularly interested in the impact of ageing following well-established relationships between loneliness and ageing in published literature, and our interest in the potential impacts of loneliness associated with demographic ageing of the Australian population. Age group comparisons in this study were enabled by examining a younger (aged 45-64 years) and older (aged 65+ years) cohort of people. These two cohorts were chosen as they fell either side of the commonly understood retirement age of 65 years, although individual assessment of their retirement status was not observed. In planned further studies, it is intended that we control for additional factors that might predict whether a person considers themselves retired. A 20-year age range allowed sufficient numbers of individuals to be observed in each cohort, although in some analyses, we note small cell sizes. Where groupings are made by family type, families with children included both dependent and non-dependent children.

Results

The prevalence of loneliness and social isolation

Figure 1 shows the prevalence of emotional loneliness over time. Over the past sixteen years, around one in five to one in six people reported they often felt lonely in any given year. While the overall proportion of Australians experiencing loneliness shows a small but steady decline from a high of 21% in 2001, to a low of 16% in 2009, rates have remained relatively stable at around 17% for the past 7 years.

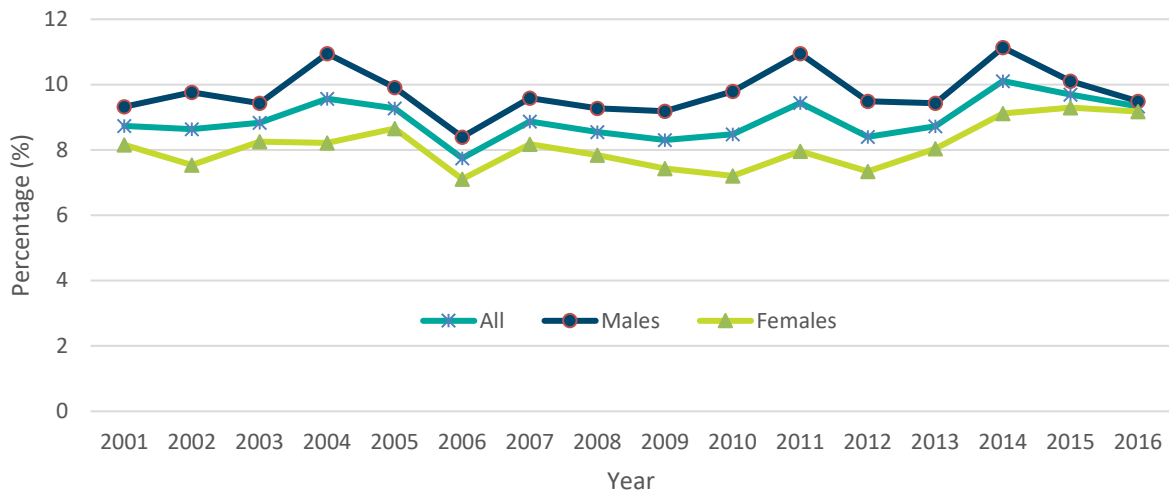
Figure 1. Proportion of Australians experiencing emotional loneliness 2001-2016, per cent



By way of comparison, figure 2 shows the prevalence of social isolation over time. The proportion of people reporting a lack of social support (around 9.5%) is lower than the rates reported for emotional loneliness, with just under one in ten people experiencing a lack of social support in any given year. While there have been positive and negative fluctuations in the average rates, comparing year on year results, the overall proportion of people reporting a negative score on the ISS has remained relatively stable, with the exception of a small upward trend for women over the past 5 years.

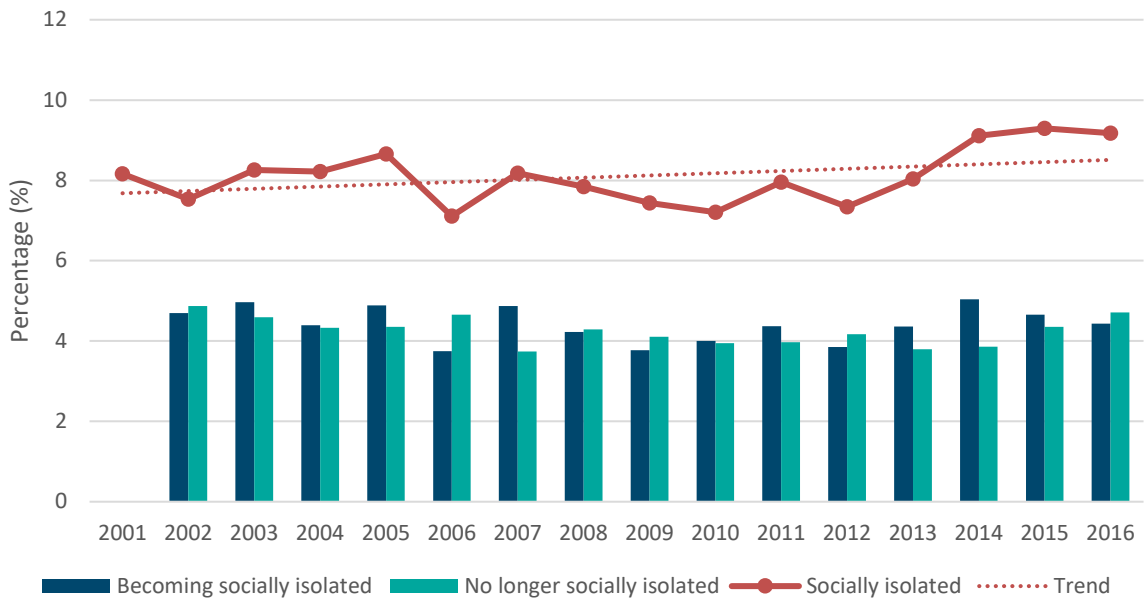
At all times, the average experience of a lack of social support for men is higher than that reported by women; however, when a lack of social support is compared to emotional loneliness, the reverse is observed, with women reporting loneliness at higher rates than those observed for men.

Figure 2. Proportion of Australians experiencing a lack of social support 2001-2016, ISS, per cent



The relative stability of average rates per wave of data is also reflected in the movement of men and women into and out of loneliness and social isolation over time. For example, both the proportion of women becoming socially isolated, and the proportion of women who were no longer socially isolated in each given year, oscillated between 3.7% and 5.0% (figure 3). Similar stability in rates were observed for men (*not shown*).

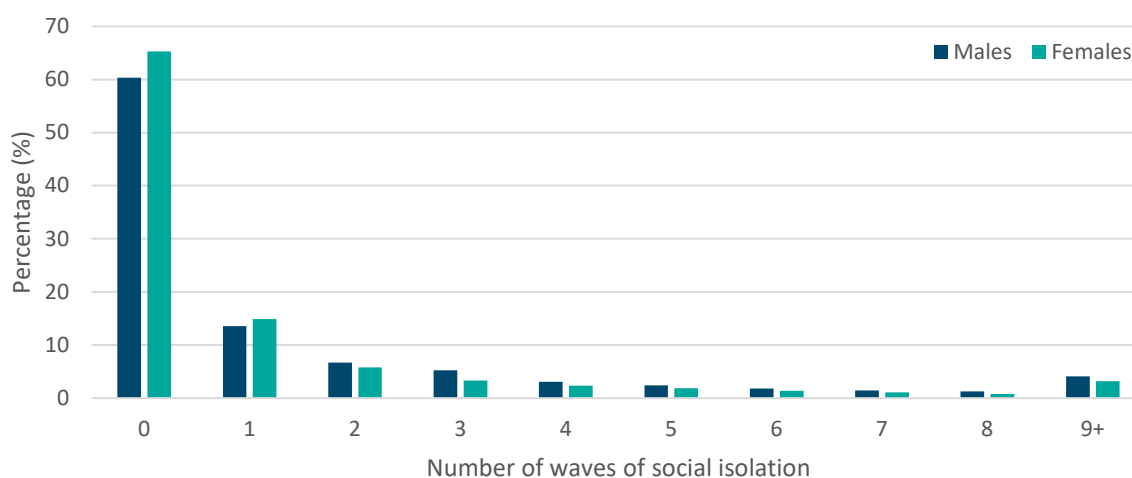
Figure 3. Movement into and out of social isolation 2001-2016, ISS, females, per cent



Persistence

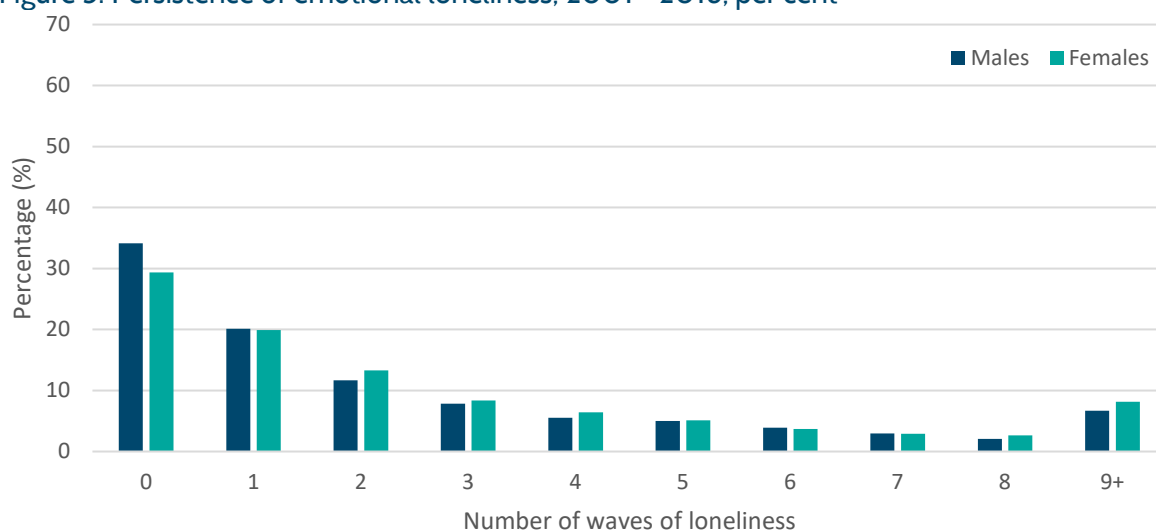
For a substantial majority of men (60%) and women (65%), a negative score on the Index of Social Support was not observed at any time in the 16-year period examined. Approximately one-sixth of men (14%) and women (15%) lacked social support in a single wave of data; while more than 3% of women and 4% of men lacked social support across more than 8 waves of data (figure 4). Women were more likely to indicate a lack of social support in a single wave, while men were more likely to lack social support persistently for two or more years.

Figure 4. Persist lack of social support, ISS, 2001 - 2016, per cent



In contrast, a substantial majority of men (66%) and women (71%) reported they had experienced emotional loneliness on at least one occasion in the 16-year period (figure 5). Approximately 20% of men and women reported loneliness in one year, while 7% of men and 8% of women reported persistent loneliness for more than 8 years.

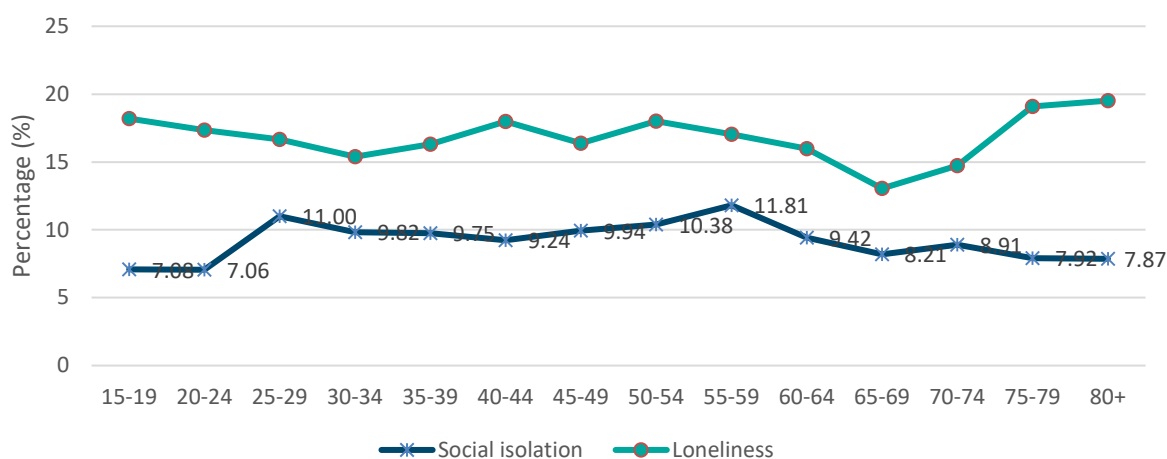
Figure 5. Persistence of emotional loneliness, 2001 - 2016, per cent



Ageing

There were notable differences in the reports of loneliness and social support for different age groups (figure 6). Young people aged under 25 years reported above average rates of loneliness, but the lowest rates of social isolation (7%) for data collected in wave 16 (2016); almost at the same low levels observed for older people aged over 75 years.

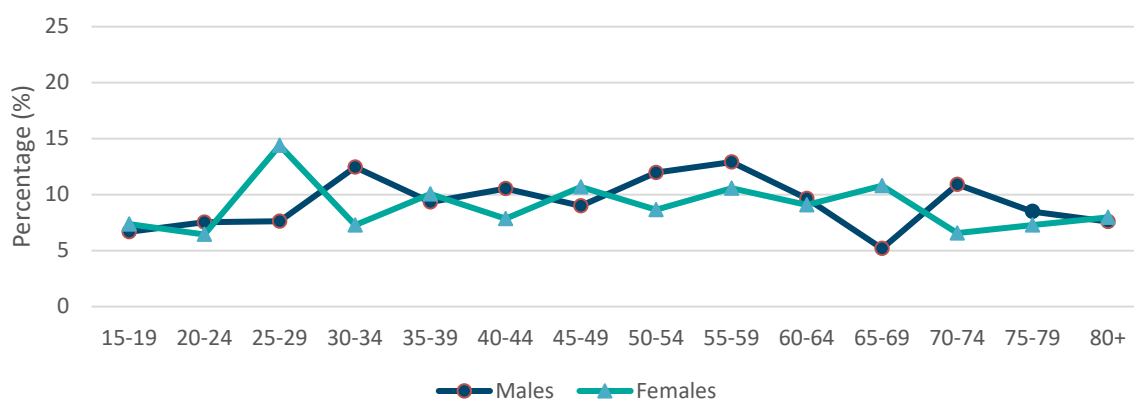
Figure 6. Proportion of Australians experiencing loneliness (ISS and emotional loneliness) by age, 2016, per cent



Decreasing levels of social support and emotional loneliness associated with ageing were generally observed for people aged 55 to 64 years. After age 64, while social support rates continued to decrease, emotional loneliness rates increased, with the highest rates of emotional loneliness observed for people aged 75 years and over (19%).

There were no clear gender differences in the average prevalence of social isolation by age group. However, levels of social support for pre-retirement aged men decreased, followed by a sharp rise after men reached average retirement ages. For women, the highest rates of social isolation were observed in the 25-29-year age group (figure 7).

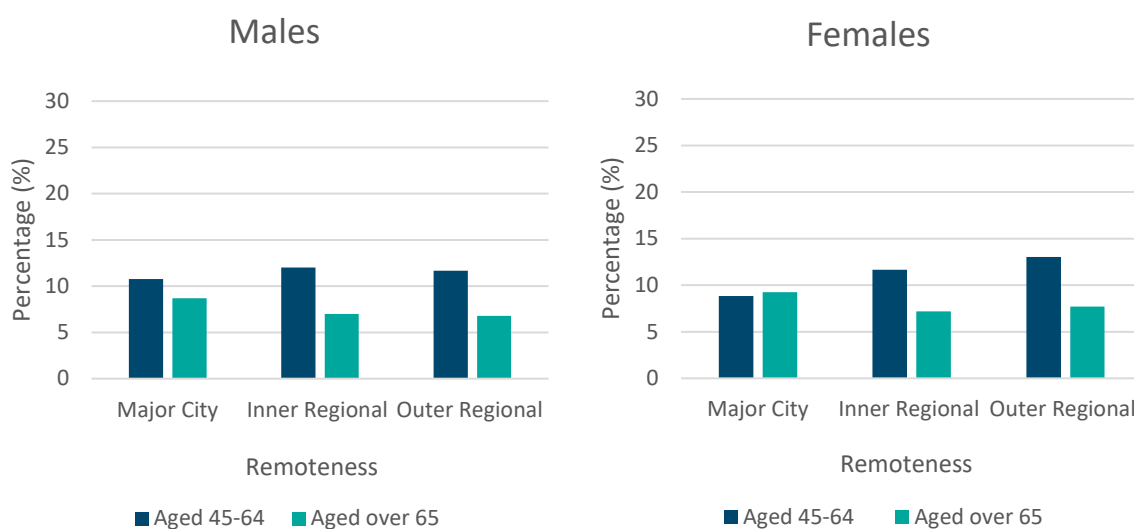
Figure 7. Proportion of Australians experiencing a lack of social support, by age and gender, per cent



Remoteness

For the next part of the report, we group people into pre-retirement age (45 - 64) and post-retirement (65 plus) age groups to compare the rates of loneliness associated with ageing. As discussed in the methodology section, these labels apply to younger and older cohorts in reference to the commonly understood retirement age for working Australians (65 years), and the groupings do not necessarily always capture whether people consider themselves retired or not.

Figure 8. Lack of social support by remoteness, age group and gender, 2016, ISS, per cent



Younger males living in regional areas are more likely to experience a lack of social support (12%) than younger males living in major cities (11%) who, in turn, have higher rates of social isolation than older males living in major cities (9%). Males from the older cohort are less likely to have experienced a lack of social support with higher remoteness. Females in both cohorts living in major cities have similar levels of social isolation (9%); results for females showing a similar pattern to that observed for males (figure 8).

Figure 9. Emotional loneliness by remoteness, age group and gender, 2016, per cent



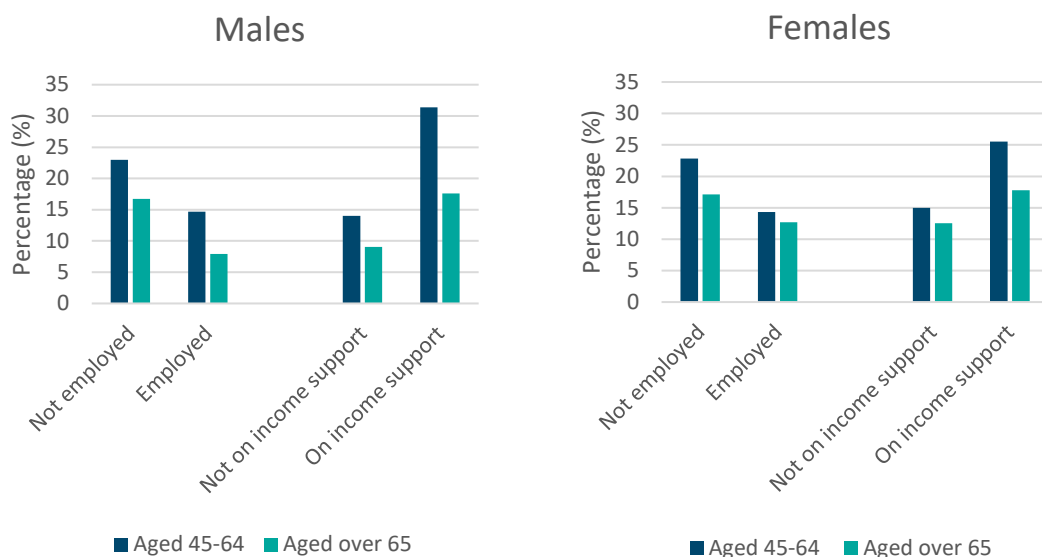
In contrast to social support, males and females show different patterns in the rates of emotional loneliness by remoteness. For both younger and older males, those living in major cities have the lowest rates of loneliness. For younger females, those living in major cities also report the lowest rate of loneliness; however, for older females, those living in major cities report the highest rate of loneliness, although the differences by remoteness are small.

Income, receipt of income support and employment

The association between social support, emotional loneliness and employment was similar for both measures—Index of Social Support and emotional loneliness—but, due to small sample sizes for the older cohort, only the results for the single measure of emotional loneliness are presented below.

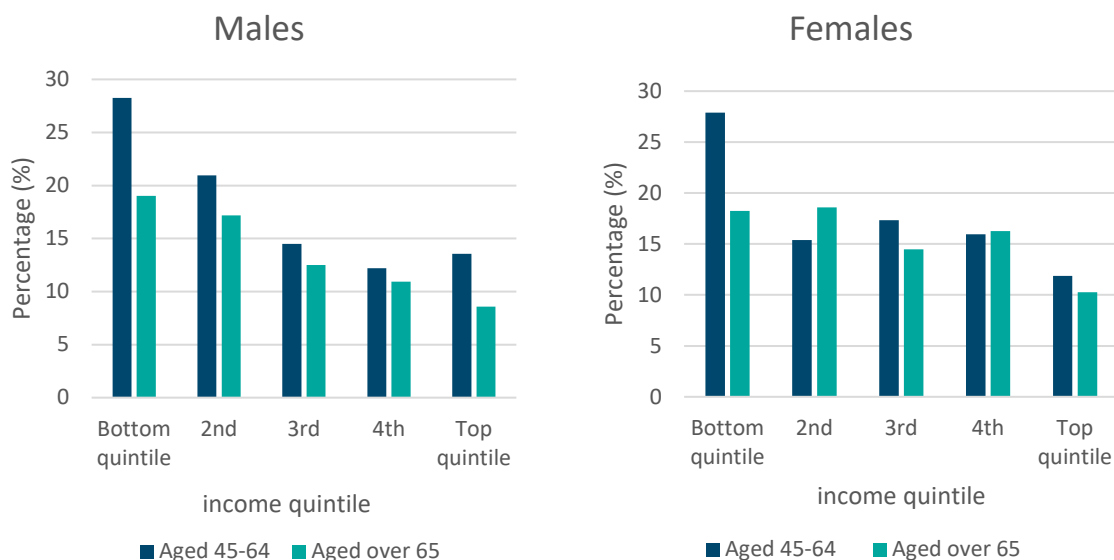
For both males and females, employment was consistently associated with lower rates of loneliness and receipt of income support was consistently associated with higher rates of loneliness. For the older cohort, employed males had the lowest rates of loneliness (8%), while the highest rates of loneliness were observed for younger males in receipt of income support (31%). While differences were not as marked as for males, similar relationships were observed for females, with unemployment and income support receipt positively associated with levels of loneliness, and females from the older cohort reporting lower levels of loneliness than the younger cohort for each employment category (figure 10).

Figure 10. Emotional loneliness, 2016, age cohort by employment, income support receipt and gender, per cent



Associations between income and loneliness were examined by dividing the cohorts into household income quintiles based on household disposable income (adjusted for household size and composition with the modified OECD equivalence scale). For both males and females, low income and younger age were associated with the highest levels of loneliness (figure 11). The rate of loneliness for males ranged from 28% for the younger cohort from the lowest income quintile, to less than 9% for the older cohort from the highest income quintile. For females, the rate of loneliness ranged from 28% to 10% associated with increasing income.

Figure 11. Emotional loneliness, 2016, age cohort by household income quintile and gender, per cent



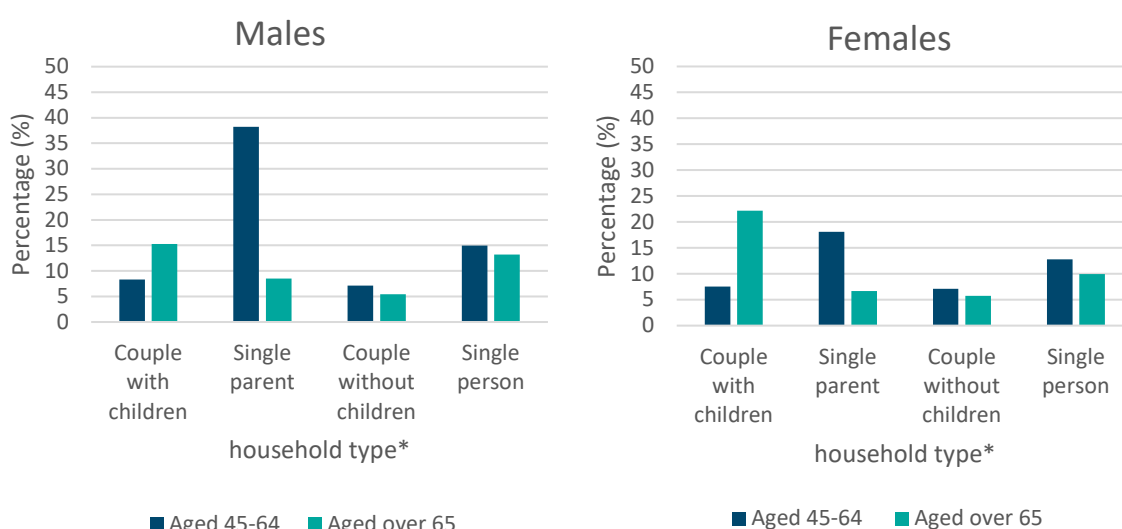
Relationships and household type

While it is possible to classify the HILDA households into more than 25 detailed household types, some types only contain a few observations which makes estimates unreliable. Accordingly, this research re-groups the household types into four main categories: couples with children (dependent or independent), couples without children, single person with children (dependent or independent), and single person households. The remaining types of households were grouped together into the 'other' category for which the results were not reported due to small sample size. Not unexpectedly, the most prevalent household type for the younger cohort was a couple family with children (46%) followed by a couple without children (25%), while for the older cohort, the most commonly reported family type was a couple without children (55%), followed by a single person household (22%).

As shown in figure 12, for both males and females from the younger cohort, single parents reported the highest level of social isolation (38% for males and 18% for females), followed by single persons (15% for males and 13% for females), while couples, especially couples without children reported the lowest level of social isolation (7% for both males and females).

In contrast, for both males and females from the older cohort, couples with children reported the highest level of social isolation (15% for males and 22% for females), again followed by single persons (13% for males and 10% for females) and then single parents, while couples without children had the lowest level of social isolation (5% for males and 6% for females).

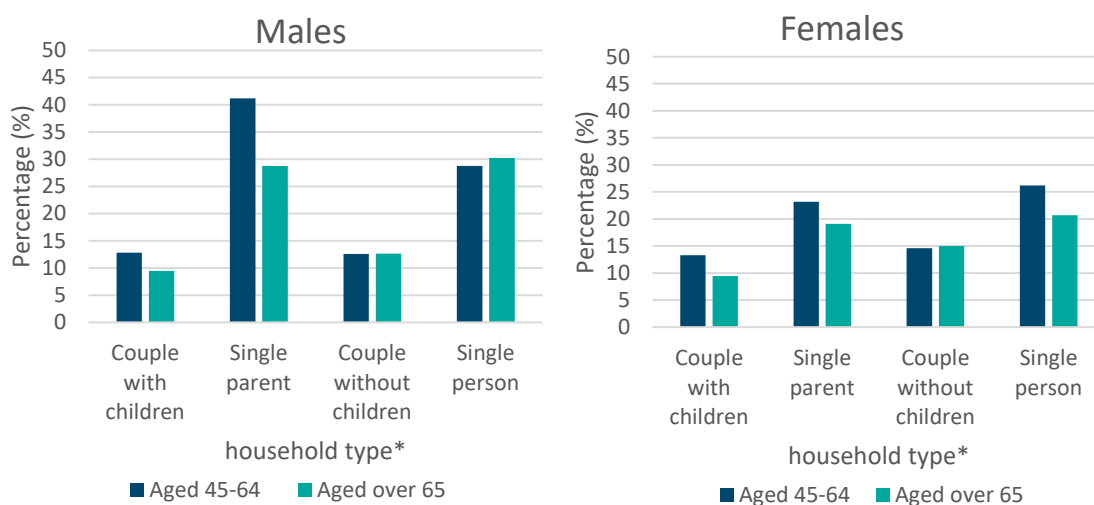
Figure 12. Lack of Social Support, 2016, age cohort, household type and gender, per cent



*'other' households were excluded due to small sample size

When examining the single measure of emotional loneliness, there are some notable differences. While younger male single parents (41%) and males living alone (29%) reported the highest levels of emotional loneliness, around one-third of older single parent males and males living alone also reported emotional loneliness. Single parent females and females living alone in both cohorts reported the highest rates of emotional loneliness among females (figure 13).

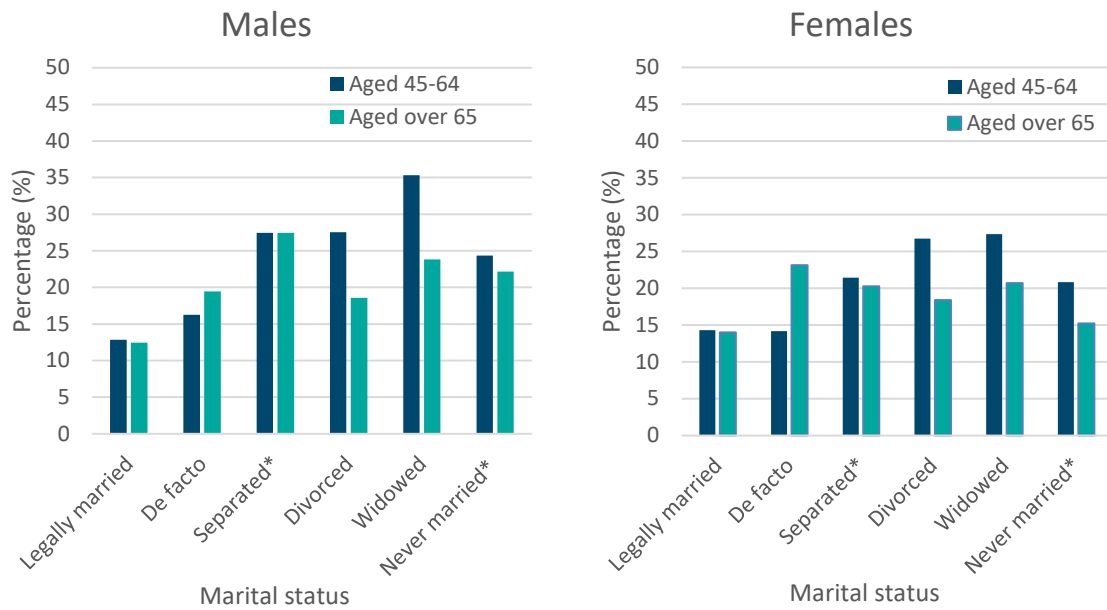
Figure 13. Emotional loneliness, 2016, age cohort by household type and gender, per cent



*'other' households were excluded due to small sample size

We also extended the analysis to examine the relationship status of individuals to determine patterns of loneliness. Similar relationships between marital status and loneliness were observed for both measures; however, due to the small sample sizes for several of the relationship types for the older cohort, only the results for the single measure of emotional loneliness are presented below.

Figure 14. Emotional loneliness, 2016, age cohort by marital status and gender, per cent



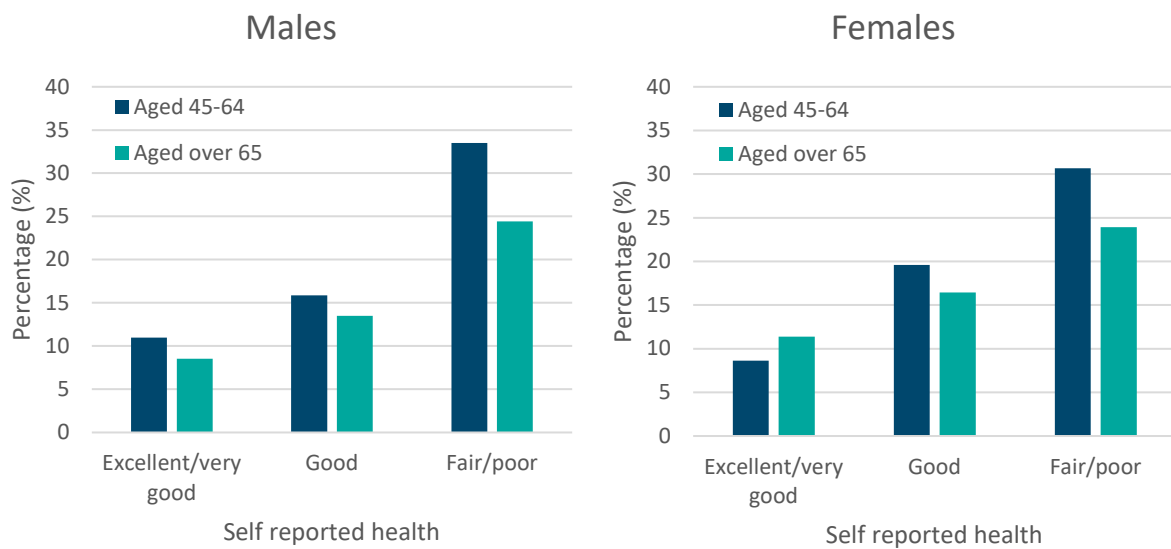
*the results for the older cohort should be interpreted with caution due to small sample sizes.

Figure 14 shows that the highest rates of loneliness were reported by younger men (35%) who were widowed, followed by divorced and separated men. Older widowed (24%) and separated men (27%) also reported high levels of loneliness. Younger divorced and widowed women reported the highest levels of loneliness (27%), while for the older cohort, de facto (23%) women reported the highest average rates of loneliness.

Self-reported health

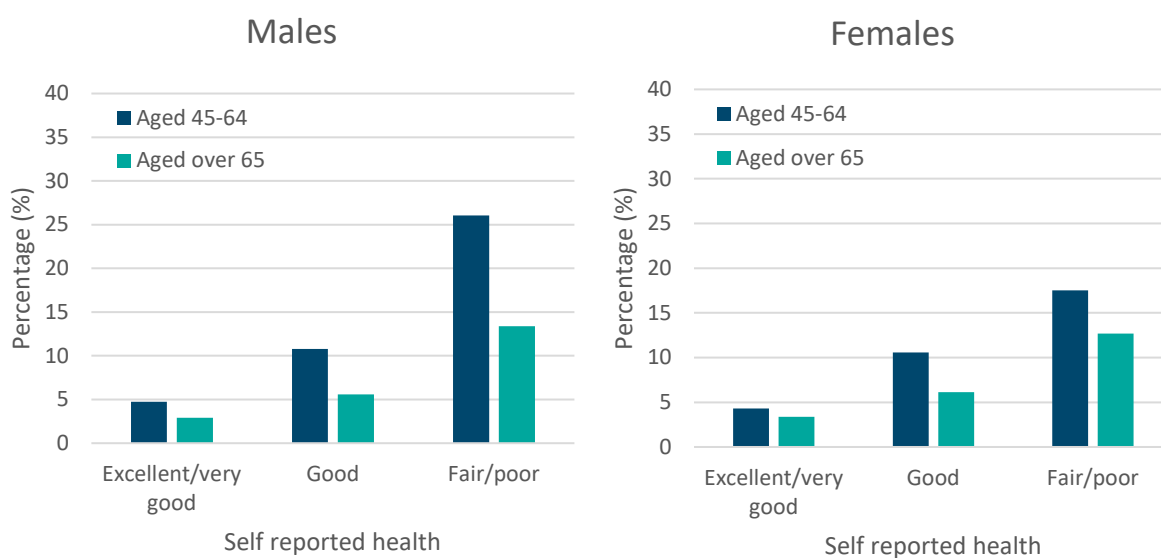
Associations between age group, health and loneliness are reported in figure 15. Self-rated assessment of health was associated with emotional loneliness for both males and females. Rates of loneliness for men reporting poor or fair health were more than 33% for the younger age cohort and 24% for the older age cohort, compared to 11% and 9% respectively for men reporting excellent health. Similar trends were observed for women, with the exception of individuals reporting excellent health, whereby the younger cohort reported lower rates of loneliness (9%) than the older cohort (11%).

Figure 15. Emotional loneliness, 2016, age cohort by self-reported health and gender, per cent



Associations between self-reported health and lack of social support showed similar patterns to those observed for the single item measure of loneliness (figure 16). Notable dissimilarities include the larger difference in the rates of social isolation between men in poorer health from different age cohorts (26% for ages 45-64 compared with 13% for ages 65+), and younger women in excellent health reporting higher rates of loneliness (4%) than older women (3%).

Figure 16. Lack of Social Support, 2016, age cohort, self-reported health and gender, per cent



Discussion

This study updates the prior work of Baker (2012) to provide contemporary estimates of the prevalence of loneliness in Australia using negative scores on the 10-item Index of Social Support (Flood, 2005) collected by the HILDA survey between 2001 and 2016. We compare our results to the single-item measure of emotional loneliness, *'I often feel very lonely'* against a range of individual characteristics and assess the impact of ageing.

Adding almost another decade of data from the HILDA survey to the loneliness prevalence rates estimated by Baker (2012) shows, on average, the number of people reporting a lack of social support has remained consistent over the past 10 years at approximately 9.5%. Overall levels of loneliness for men are higher than women for all 16 waves of available data, though the reverse is true when examining the proportion of people reporting emotional loneliness against the single-item measure. On average, around one in six people (17%) report emotional loneliness, with women reporting higher rates of emotional loneliness than men for every year of available data.

It is not unexpected that the average rates of emotional loneliness are higher, given the Index of Social Support requires the combined answers to ten questions capturing different dimensions of loneliness to achieve a negative threshold before a lack of social support would be indicated. That said, the single item asks respondents to report if they feel *'very lonely'*, rather than just *'lonely'* which is likely to elicit agreement from people who are substantially, rather than mildly, affected by feelings of loneliness.

Of particular interest are the differences in relative reports for men and women on the two measures. These results could possibly reflect that females are more likely than males to admit being lonely where the question requires them to label themselves as lonely (Borys & Perlman, 1985), and therefore the variation could be an artefact of our method of assessment. However, it is more likely the Index of Social Support is providing a different, or composite, measure of the different constructs of loneliness when compared to the single-item measure.

Although employing a single scale of loneliness can be useful in its own right (van Baarsen, 2001) it may be useful in some circumstances to distinguish between loneliness constructs when examining causation and policy response. Emotional loneliness has been described as closer to the concept of global loneliness, capturing the absence of a reliable attachment figure and referring to qualitative aspects of relationships captured by words like *'feel, miss and experience'* (van Baarsen, 2001, p123). Social loneliness reflects a lack of social embeddedness and integration and is often associated with words like *'many people'* or *'my friends'* (van Baarsen, 2001; Flood, 2005). When we examine the items contributing the most to negative scores on the Index, we note a greater proportion of people reporting negative values on the items relating to social loneliness *'People don't come to visit me as often as I'd like'* and *'I seem to have a lot of friends'*,

suggesting the composite ISS score is weighted more heavily to social rather than emotional loneliness.

Flood (2005) has postulated that relationships between gender and loneliness are likely to be shaped by differences in both the structure and quality of social networks for men and women, which might include the frequency, diversity and amount of social contact, and the tendency for women to have a greater number of emotionally intimate relationships than men (Fuhrer & Stansfeld, 2002). The propensity for women to report more support, and greater benefit, from relationships with friends and relatives when compared to men who report more support, and greater benefits from relationships with their spouses, has been discussed for a number of decades (House, Landis & Umberson, 1988; Wong, 1986). Therefore, external theory supports us relying on these results as capturing true underlying gender effects related to the different measures.

Turning back to our results, this study confirms the findings of Baker (2012) that, overwhelmingly, men and women report they are not lonely and they do not lack social support when surveyed at a single point in time. However, a substantial minority of people experience a lack of social support, and a substantial majority report emotional loneliness at some time in their life. A further small, but significant, proportion of people report a lack of social support and/or loneliness persistently. We draw from the literature in describing these individuals as chronically lonely (see, for example, Holt-Lunstad, 2015).

This study was unable to replicate exactly the overall prevalence of loneliness reported by Baker (2012) using the first 8 waves of HILDA survey data (9%). We hypothesise that the differences reported in this study are due to the application of population weights that allow us to estimate more closely the prevalence of loneliness for the Australian population. When 8 extra years of data are added, we also do not observe the small, but increasing, persistence of loneliness observed by Baker. Instead, we find that rates and the number of people moving in and out of loneliness, despite significant in number, appear relatively stable over the past decade.

Consistent with prior research, we find deficits in levels of social support that are not necessarily confined to older ages, with decreasing levels of loneliness observed in the years leading up to the age of 65 years. After the age of 65 years, the number of people experiencing a lack of social support continues to decline, but the rate of emotional loneliness increases to reach a peak at ages over 74 years. The interaction of ageing, gender and key personal characteristics was also associated with different levels of loneliness. Higher remoteness generally increased the risk of loneliness for men and women, with older age reducing the risk of a lack of social support for men living in regional areas.

Lack of employment and/or receipt of income support was associated with higher risk for loneliness for both men and women, with the highest rates observed for younger men in receipt of income support. Not surprisingly, similar trends were also observed for low income, likely reflecting the correlation between income support receipt and low income, with almost one-third of men and women reporting loneliness where their income was in the bottom household equivalised income quintile.

Consistent with the prior study by Flood (2005), single parents were most likely to experience a lack of social support. This was particularly the case for single fathers, with almost 40% of younger fathers reporting a lack of social support and more than 40% reporting emotional loneliness. Where men and women were younger than 65 years and widowed, high rates of loneliness were also observed. Older age impacted positively on the loneliness rates of widows but negatively for men and women in defacto relationships. While the lack of a spouse through widowhood or relationship breakdown intuitively explains higher rates of loneliness, a more complex picture emerges for defacto relationships. Despite its increasing prevalence in Australia, cohabitation is a relatively unstable or volatile living arrangement, with the vast majority of couples either marrying or separating within the first few years of the union (Qu et. al., 2009). This research suggests defacto relationships provide a lower level of protection against loneliness than other relationship types.

Finally, poorer health was associated with higher rates of emotional loneliness and a lack of social support, with the association between poor health and men and women's loneliness more significant for the younger cohort, particularly men.

Overall, the research confirms Australian and International evidence that finds a substantial proportion of people experiencing loneliness. One in 10 people lack social support, and one in 6 people is experiencing emotional loneliness. Particular cohorts in the Australian population are acutely at risk. While this research did not examine whether loneliness pre-dated poor health outcomes or vice versa, the findings support extant health literature of a relationship between poor health and loneliness. This research adds to the substantial Australian and international research evidence to confirm that poverty, unemployment and poor relationships are associated with loneliness and lonely people are likely to make greater use of the health care system.

Despite several decades of sound data collection and research, there has been no reduction in the sizable proportion of people experiencing a lack of social support and loneliness in Australia. The contemporary estimates provided here make a compelling case for elevating a discussion of the risks and protective factors associated with loneliness in health and social policy discourse to the status of other similarly concerning public health problems.

Further research

This research is part of a broader project aimed at increasing our understanding of the impact of loneliness on ageing Australians. It is likely that the Index of Social Support captures elements of 3 or more loneliness constructs - objective social interaction, and subjective social and emotional loneliness. While many studies find overall, objective and subjective measures of loneliness each predict poor outcomes, in future research we will seek to test whether the strength of associations between risk factors and loneliness increases when examining loneliness constructs separately.

Future research will further assess the impact of confounding factors and make recommendations for reducing the impact of loneliness for high risk groups. We will also seek to determine the causal direction of relationships between risk factors and loneliness. It is likely that more nuanced study of the predictors and causal pathways of different loneliness constructs will support different recommendations for intervention. Some interventions, for example, may aim to improve social supports for high-risk groups, and others may aim to protect people from biological and psychosocial stressors, including the breakdown of family relationships.

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Appendix A

Items on social and emotional loneliness in the HILDA survey

1. I have no one to lean on in times of trouble.
2. I don't have anyone I can confide in.
3. I often feel very lonely.
4. I often need help from other people but can't get it.
5. People don't come to visit me as often as I'd like.
6. I seem to have a lot of friends.
7. When something's on my mind, just talking with the people I know can make me feel better.
8. I enjoy the time I spend with the people who are important to me.
9. When I need someone to help me out, I can usually find someone.
10. There is someone who can always cheer me up when I'm down.

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