Loneliness in Australia:

Research, Context and New Findings

2019

DQUBE solutions

friends for good

Loneliness in Australia: Research, Context and New Findings, 2019

Contents

Foreword

Loneliness and social isolation have been in the spotlight of recent times.

Statements such as loneliness being worse for your health than smoking[1] have identified them as neglected health issues that need to be tackled. However, like all psychosocial issues, loneliness and social isolation are complex. What is consistent from the research is that loneliness and social isolation are a serious problem that are impacting many Australians.

What else is clear is that we need more information about what causes loneliness and social isolation, and what can be done to prevent and address them. Given the rising rates of inequality in Australia[2], this warrants further investigation.

Greater inequality is harmful, as those with greater disadvantage struggle to participate in society[3]. This work led by Friends for Good assists to build a greater understanding of the picture of loneliness and social isolation in Australian communities by considering the role of income. This information can be used to better plan interventions to assist those experiencing loneliness and social isolation.

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1 *Holt-Lunsted, Smith, Baker, Harris and Stephenson, 2015*

2 *Australian Council of Social Service & University of New South Wales, 2018*

3 *Australian Council of Social Service & University of New South Wales, 2018*

Executive Summary

The *Loneliness in Australia* report provides both an understanding of loneliness and a critical analysis of important findings about loneliness in Australia today.

The report was undertaken by Friends for Good Inc, in partnership with DQUBE Solutions.

Using a representative sample of 1,020 adults, the key findings of the survey undertaken are:

1. A conservative estimate is that 15% of our sample would be considered to be experiencing high levels of loneliness. In the wider population, this would equate to almost 3 million (2,913,500) Australian adults.
2. Loneliness does not discriminate. Similar scores in loneliness were found for both men and women, people of all ages, those in cities, regional and rural areas. It impacts people from all walks of life.
3. 71.4% of people who say 'I can't really make ends meet' also say money is a barrier to making social connections.
4. The highest earners ($3000+ per week/ $156, 000+ per year) are significantly less lonely than the two lowest categories of earners ($1 – $299 per week/ $1 – $15, 599 per year).
5. The way people say they are doing economically impacts how lonely or connected they are. Those who report being able to get by easily with the money they have are the least lonely and have the lowest risk for social isolation.
6. There is a negative relationship between income and loneliness, as income increases, loneliness tends to decrease and vice versa.

My sincere thanks to those people who undertook this survey and shared their experiences of loneliness.

I hope that this report and its findings will contribute to the research base, understanding and dialogue about loneliness in Australia.

ELEISHA. M. LAURIA

Author

Initial overview

Defining loneliness

Loneliness has long been understood as part of the human experience, having been alluded to since the time of Aristotle and written about since the early 16th century[4].

Humans are recognised as a "...fundamentally social species with a basic need to belong and a strong drive for intimacy and companionship"[5]. In recent years, the concept of loneliness has been given greater attention in psychological and social study and researchers have sought to define this complex concept.

There is some consensus in the literature, with loneliness being often defined as an aversive, subjective feeling of the inadequacy of social relationships[6]. There is currently no single, agreed upon definition for loneliness. However, it is thought to involve both the quantity and perceived quality of social connections. Importantly, loneliness is different to both social isolation and being alone which are the objective experiences of not having the company of others[7]. People can be surrounded by many others and find themselves feeling lonely or can be spending quality time in a solitary state and be completely content. This notion of loneliness not being synonymous with isolation is supported by the literature, with several studies showing a difference between reported feelings of loneliness and the number of social connections a person has[8].

Some researchers have also made a distinction between types of loneliness, defining a lack of a social network as social loneliness and a lack of deep connection with a significant other as emotional loneliness[9]. Loneliness can also be defined as either transient/situational, or chronic, depending on the amount of time it has impacted an individual. As the name suggests, transient/situational loneliness is limited to a shorter amount of time and may be the result of the situation a person finds themselves in, such as losing a job or partner[10]. In contrast, chronic loneliness affects the individual regardless of situational factors and is constantly present in a person's life.

4 *Valtorta & Hanratty, 2012; Bound Alberti, 2018*

5 *Elmer, 2018, p. 15*

6 *Engel, 2017*

7 *de Jong Gierveld & Tilburg, 2010*

8 *Cacioppo & Hawkley, 2009*

9 *Lui & Rook, 2013*

10 *Shiovitz-Ezra & Ayalon, 2010*

Measuring loneliness

Different methods have been used to measure loneliness since it was first recognised as a clinical issue in the 1980s[11].

Given that it is a subjective experience, objective measurement is difficult. Some researchers have used proxy measures, such as number of connections, close friends or amount of time spent with others as a method of inferring loneliness[12]. A limitation of using proxy measures for loneliness is the difficulty in determining whether those who lack connection actually *feel* lonely[13]. That is, people may objectively lack social interaction but may not feel lonely and vice versa.

A further consideration in measuring loneliness is the negative stigma surrounding it, with people possibly being reluctant to admit their experiences in research settings[14]. The development of empirical scales, such as the UCLA Loneliness Scale[15] and the de Jong Gierveld Loneliness Scale[16] have greatly increased the ability to conceptualise loneliness. These scales differ in the questions asked and their use of the explicit wording about loneliness. The UCLA Loneliness Scale in particular has been widely used (in approximately 80% of empirical studies into loneliness)[17] allowing for comparisons across time and between samples.

Qualitative measures have also been used to gain an in-depth understanding of how individuals experience loneliness. Quantitative data findings have been explored more extensively using qualitative analysis such as interviews and developing case studies. This has given great insight into the subjective experience of loneliness, however, this style of research is time-consuming and is limited in generalisability.

[11] *McWhirter, 1990*

[12] *Flood, 2005*

[13] *Franklin & Tranter, 2008*

[14] *de Jong Gierveld, 1998*

[15] *Russell, Peplau & Ferguson, 1978*

[16] *de Jong Gierveld & Tilburg, 2010*

[17] *Goossens, Klimstra, Luyckx, Valhalst & Teppers, 2014*

Impact

Loneliness and the related negative emotions and cognitions have been found to influence countless aspects of health and wellbeing.

Using prospective research methods, where participants are followed over a course of time prior to developing an illness, loneliness has been shown to predict impaired cognition[18], difficulty sleeping[19] and less physical activity[20]. Some longitudinal research suggests loneliness leads to depression[21] and is related to suicidality[22]. There is also a biological impact of experiencing loneliness. It has been related to increased blood pressure[23], heart disease[24], immune dysregulation[25] and twice the risk for Alzheimer's disease[26] amongst others. The negative effects of loneliness can also be chronic and cumulative[27], i.e. they compound. Shockingly, a robust finding in recent research shows loneliness and feelings of isolation predict mortality[28]. Luo, Hawkley, Waite and Cacioppo[29] reported "older adults with the highest levels of loneliness were 1.96 times more likely to die within six years than those with the lowest levels of loneliness". Similarly, in a large meta-analytic study[30] utilising the data of 3.4 million respondents, researchers reported that loneliness is associated with a 26% increased likelihood of early mortality. This likelihood of increased mortality exceeds that of well known issues such as obesity and air pollution and is found after controlling for other factors, like pre-existing health conditions and age.

A lack of social connection can also be deeply related to the sense of self as Hawkley and Cacioppo[31] write "…a perceived sense of social connectedness serves as a scaffold for the self- damage the scaffold and the rest of the self begins to crumble". Qualitative reports support the powerful emotional sorrow that loneliness and the related lack of a sense of self can cause[32]. For example, loneliness has been described as "overwhelming", "stressful", "sadness", "an ache", "desolate", "desperate", "frightening" and "incomplete"[33]. In some cases, the respondents indicated a complete hopelessness and inability to find a way to cope and resolve the issue.

There is also a community-wide economic impact of loneliness that should be considered. Several studies in the UK have investigated the economic burden of loneliness. Loneliness and the related health effects were estimated to cost employers £2.5 billion per year considering absenteeism, turnover and reduced productivity[34]. Another UK study by the London School of Economics estimated the cost of loneliness as £6,000 for a decade in the life of a lonely older person[35]. Similarly, Fulton and Jupp[36] estimated the cost of being chronically lonely to be £11,725 over 15 years compared to those not experiencing loneliness. It is to be expected that there would be a significant cost to the Australian health system given current estimates of the prevalence of loneliness.

[18] *Cacioppo & Hawkley, 2009*

[19] *Hawkley, Preacher & Cacioppo, 2010*

[20] *Hawkley, Thisted & Cacioppo, 2009*

[21] *Hagerty and Williams, 1999*

[22] *Goldsmith, Pellmar, Kleinman & Bunney 2002*

[23] *Hawkley, Masi, Berry & Cacioppo, 2006*

[24] *Thurston & Kubzansky, 2009*

[25] *Steptoe, Owen, Kunz-Ebrecht & Brydon, 2004*

[26] *Wilson et al., 2007*

[27] *Caspi, Harrington, Moffitt, Milne & Poulton, 2006; Danese et al., 2009*

[28] *Tanskanen & Anttila, 2016*

[29] *Luo, Hawkley, Waite & Cacioppo, 2012, p.8*

[30] *Holt-Lunsted, Smith, Baker, Harris and Stephenson, 2015*

[31] *Hawkley & Cacioppo, 2010, p.3*

[32] *Hauge & Kirkevold, 2010*

[33] *Friends for Good, 2018*

[34] *New Economics Foundation, 2017*

[35] *McDaid & Park, 2017*

[36] *Fulton & Jupp, 2015*

Causes

A number of situational and individual factors have been associated with increased levels of loneliness.

Experiences such as the death of a spouse, social anxiety and low income have all been related to higher levels of loneliness[37]. Loneliness is hypothesised to have a bidirectional relationship with depression and functional limitations, that is depression and functional limitations may cause loneliness or may be caused by loneliness[38].

From different theoretical perspectives a number of explanations have been given for the cause of loneliness and how it impacts health and wellbeing. From a sociological perspective, loneliness is hypothesised to be caused by changes in society and the increasing 'liquidity' of relationships[39]. That is, relationships are more fleeting and fragile and loneliness is therefore a direct result of the social atmosphere people find themselves in. From this viewpoint the loneliness experienced by people in Western society is a result of consumerism, urbanisation and the rise of nuclear family units[40].

An alternate view is that loneliness may be the result of an evolutionary drive, similar to hunger and thirst, that works to alert us to the need to find and nurture social relationships to ensure our survival[41]. From this perspective loneliness is a natural, biological response to a lack of social support that is useful in the short-term, but dangerous should it become chronic.

The actual neurological mechanisms for what happens in the brain to cause loneliness is difficult to measure experimentally with human participants. Some evidence suggests that social exclusion activates the same pathways in the brain as physical pain[42]. Animal models of loneliness indicate changes in the brain structure and functioning as a result of being isolated[43]. Overall, the wealth of international research indicates that loneliness is harmful to physical, emotional and cognitive health, but how exactly these processes work remains unclear[44].

[37] *Elmer, 2018*

[38] *Luo, Hawkley, Waite & Cacioppo, 2012*

[39] *Bauman, 2000; Franklin & Tranter, 2008*

[40] *Franklin, 2012*

[41] *Cacioppo & Hawkley, 2009*

[42] *Eisenberger, Lieberman & Williams, 2003*

[43] *Caioppo, Capitanio & Cacioppo, 2014*

[44] *Cacioppo & Hawkley, 2009*

Prevalence

International research mostly in Western countries estimates the prevalence of loneliness to be between 20 to 40% of adults at a given time[45].

There are no recent studies in Australia with a representative sample that give a definitive statistic of the prevalence, however, the existing research indicates that loneliness is widespread.

Flood[46] reported 16% of adults aged 25 to 44 often feel lonely. Franklin and Tranter[47] reported 36.4% of Australians experience chronic loneliness, which is an increase from data collected in the 1960s. Similarly, in a Perth study of older Australians, 31.5% reported experiencing loneliness some of the time[48]. In the Time We Talked survey[49], Friends for Good found 88% of people reported having felt lonely at some point in their lives. In a study undertaken by Lifeline[50], 60% of respondents said they 'often felt lonely'. The Australian Loneliness Report[51] stated one in four adults experience loneliness. In a similar study undertaken by Relationships Australia[52], one in six people reported experiencing emotional loneliness.

Care should be taken when critically evaluating these studies, as empirical measures were not always employed and the samples were not necessarily representative of the Australian community. Variations in measurement tools and sampling explain the different estimates of the prevalence of loneliness in Australia. What is consistent from the research is that loneliness is a serious issue that is impacting many Australians.

[45] *Luo, Hawkley, Waite & Cacioppo, 2012*

[46] *Flood, 2005*

[47] *Franklin & Tranter, 2008*

[48] *Steed, Boldy, Grenade & Iredell, 2007*

[49] *Friends for Good, 2018*

[50] *Lifeline, 2016*

[51] *Australian Psychological Society, 2018*

[52] *Relationships Australia, 2018*

The Present Research Question

Background

Several demographic factors have been correlated with increased loneliness.

That is, when variables are measured, they are associated to one another; this doesn't indicate that one directly causes the other. One key demographic characteristic that has been correlated with loneliness is economic position. This is an important variable, as when planning services and interventions to assist those experiencing loneliness, lack of income may be a considerable barrier.

The existence of this barrier to social opportunities in real-world situations is evident from many callers to FriendLine (a phone service for people who are experiencing loneliness to speak to a trained volunteer). Callers often comment that they are limited in what they are able to do to make connections with others because of lack of income. This was one of the key factors leading to this research question.

A number of research studies internationally have considered the relationship between one's economic situation and loneliness. This has been operationalised in several ways, including household income[53], wealth[54], education[55], socioeconomic status of a geographic area[56], or self-assessed contentment with economic situation[57]. Within these studies, loneliness has also been conceptualised and measured in different ways, with some using a direct question assessing loneliness and others using multifaceted scales. Nevertheless, a clear finding in the international literature is that people who face greater economic hardship also tend to experience higher levels of loneliness[58]. While these studies are correlational and cannot confirm causality, it has been hypothesised that lack of income may cause or worsen loneliness in a number of ways. For example, lack of income can limit access to social interaction opportunities, can decrease self-esteem and can limit the ability of people to reciprocate the support of others[59].

Research into the relationship between loneliness and a person's economic situation in Australia has been limited, with differing results. Steed, Boldy, Grenade and Iredell[60] found that neither education nor ability to manage on current income was related to loneliness. Conversely, Franklin and Tranter[61] reported that those that had higher levels of income had significantly lower loneliness in terms of duration, frequency and overall levels. Flood[62] also reported that those whose financial situation had deteriorated in the past 12 months had less social support.

[53] *Hawkley, Hughes, Waite, Masi; Thisted & Cacioppo, 2008*

[54] *Shankar, McMunn, Demakakos, Hamer & Steptoe, 2017*

[55] *Antonucci, Airouch, Janevic, 1999*

[56] *Steed, Boldy, Grenade & Iredell, 2007*

[57] *Mullins, Elston & Gutkowski, 1996*

[58] *Di Julio, Hamel, Munana & Brodie (2018)*

[59] *Pinquart & Sörenson, 2003*

[60] *Steed, Boldy, Grenade & Iredell, 2007*

[61] *Franklin & Tranter, 2008*

[62] *Flood, 2005*

Contrasting results between the studies may be related to differences in methodologies or the samples used.

Australia differs greatly from other populations in many ways, particularly our indigenous heritage and culture, the sparsity of settlement, the urban/ rural divide and environmental factors such as drought[63]. There is limited research into the prevalence of loneliness in cities compared to regional and remote areas. In one view, "rural and remote regions have been found to be richer in bonding social capital"[64]. That is, researchers have found that the social bonds in rural communities may be stronger and more longer lasting. An alternate perspective is that rural and remote communities have less access to services, interventions and social support which could exacerbate loneliness. Particularly in geographically remote areas, people may become socially isolated, that is, have an objective lack of social contact. Lower income in rural and remote areas may present an even greater challenge for overcoming loneliness. For example, low cost transport options are scarcer[65] and, as regional centre populations decrease, there is a reduction in free local community activities[66]. There is consistent evidence of a higher incidence of mental health disorders, suicide rates and socioeconomic disadvantage in rural and remote areas compared to urban areas[67]. It is important that investigations of social issues such as loneliness include an exploration of nuanced demographic factors, for example rurality, as this is an important issue in Australia.

The overall aim of this study was to examine the state of loneliness in Australia at the present time using a representative sample and empirical methods.

More specifically, the aims included:

- Gaining an estimate of the prevalence of loneliness (using the UCLA Loneliness Scale; UCLA-LS[68]) for Australian adults.
- Comparing loneliness scores across a number of demographic characteristics to determine whether specific groups had significantly higher scores.
- Comparing loneliness based on geographic distance from services i.e. rural vs. urban (based on post code classification using the Accessibility/Remoteness Index of Australia; ARIA)[69].
- Quantifying the relationship between income (based on pre-tax income categories) and loneliness (measured by the UCLA-LS).
- Analysing group differences in both loneliness (measured by the UCLA-LS) and social isolation (using the Expanded Lubbens Social Network Scale; LSNS-18)[70] based on how people report their economic position (using a 4-option self-report).
- Assessing whether money is a barrier to making social connection by asking people a direct question, gaining a follow-up qualitative response and analysing these results based on self-reported economic position.

[63] *Davis & Bartlett, 2008*

[64] *Beer et al., 2016, p.172*

[65] *Nutley, 2003*

[66] *Davis & Bartlett, 2008*

[67] *Caldwell, Jorm & Dear, 2004*

[68] *Russell, 1996*

[69] *Department of Health and Aged Care, 2001*

[70] *Lubben & Gironda, 2003*

A question of importance is whether the same negative relationship exists between income and loneliness and whether the relationship is of a similar strength in urban, regional, rural and remote areas. That is, when looking at a large sample of Australians, do those who have less income also tend to score higher on measures of loneliness? There is a lack of empirical research into the relationship in Australia using a representative sample and a validated measure of loneliness. It is hypothesised that, similar to international studies, those who report lower income will also score more highly on a measure of loneliness. Furthermore, it is hypothesised that as individuals are more removed from urban centres, this relationship will become stronger, being that lack of income will be a greater challenge for those more geographically isolated.

Overall, understanding Australians experiences of loneliness based on demographic characteristics such as economic situation and geographic location has important implications for policy development and the implementation of services. It is imperative that services are designed that can overcome potential barriers, including lack of income. The cultural and geographic landscape of Australia is unique. At a broader level it is important that we build the research base for understanding loneliness from an Australian perspective using robust and nationally representative studies.

Method

In order to investigate the above aims Friends for Good undertook this research in partnership with DQUBE Solutions.

A representative sample of 1,020 Australians was sought and potential participants were contacted via email and invited to undertake the online survey in August 2019.

The survey included a number of demographic questions based on the Australian Bureau of Statistic's 2016 Census of Population and Housing. Measures of loneliness and isolation were also used, including the UCLA Loneliness Scale Version 3[71] and the Expanded Lubbens Social Network Scale (LSNS-18)[72]. These measures were chosen as they have been widely used and empirically tested and validated. Participants were also asked about their economic situation, they could choose between four options ranging from "I really can't make ends meet" to "I can buy pretty much anything I want with the money I have". Simply considering a person's income may not provide a true picture of their economic situation. For example, people with high income may also have high expenses. Therefore, this question was included to allow a more nuanced analysis. A final question related to whether participants felt money was a barrier to them making social connections. More details about the measures used is provided in Appendix 3.

[71] *Russell, 1996*

[72] *Lubben & Gironda, 2003*

Results

Sample

The survey had 1,020 completed responses. The sample was representative, based on the Australian Bureau of Statistics 2016[73] demographic data, in terms of gender, age, geographic distribution and income. A more detailed breakdown of demographic characteristics is included in Appendix 1.

Who is lonely?

The scores on the UCLA Loneliness Scale ranged from a minimum of 20 to a maximum of 80. The average score across the sample was 47.4. In terms of categorising people as lonely or not, there is no set cut-off for the UCLA Loneliness Scale. Using standard published cut-offs[74], 66.3% of our sample would be considered as having a high loneliness score (UCLA-LS score of over 44). Using a more conservative method[75], 15% of the overall sample would be considered to have a high loneliness score.

> When looking at loneliness based on various demographics, there were no significant differences between location based on post code, level of education attained, gender, country of birth, or main language spoken.

There was one difference between loneliness scores in relation to age groups, with those aged 70-74 having lower average loneliness scores compared to a number of other age groups.

Those who were unemployed had significantly higher loneliness scores compared to other work status categories.

[73] *ABS, 2016*

[74] *Cacioppo & Patrick, 2008*

[75] *One standard deviation above the mean, used by Adams, Sanders & Auth, 2004*

Are loneliness and income related?

We looked at the relationship between income and loneliness in a number of ways including a measurement of the strength of the relationship (a correlation) and differences between groups based on their income category and their self-described economic situation.

There was a small, but statistically significant, negative correlation between income and loneliness. That is, those scoring lower on loneliness tended to be in the higher income categories and vice versa.

There was also a significant difference between income categories in terms of loneliness, with those in the highest income category ($3000 + per week/ $156, 000+ per year) having lower loneliness scores than those in each of the two lowest income earning categories (ranging from $1- $299 per week/ $1- $15, 599 per year).

There were also group differences based on how people feel about their economic situation, that is, how well they are managing on the income they have. As can be seen in Figure 2 below, people who report struggling to make ends meet have the highest loneliness scores. Looking at each group of responses, a pattern emerges whereby reported loneliness is less based on how well people report being able to get by on the money they have. The opposite can be seen with the Lubben's isolation scale, higher scores on this measure indicate more social connectivity. That is, when looking at the group responses, those who report not being able to make ends meet are at the highest risk for social isolation. In line with results in relation to loneliness, as people report greater economic stability, they also report more social connectivity i.e. less social isolation.

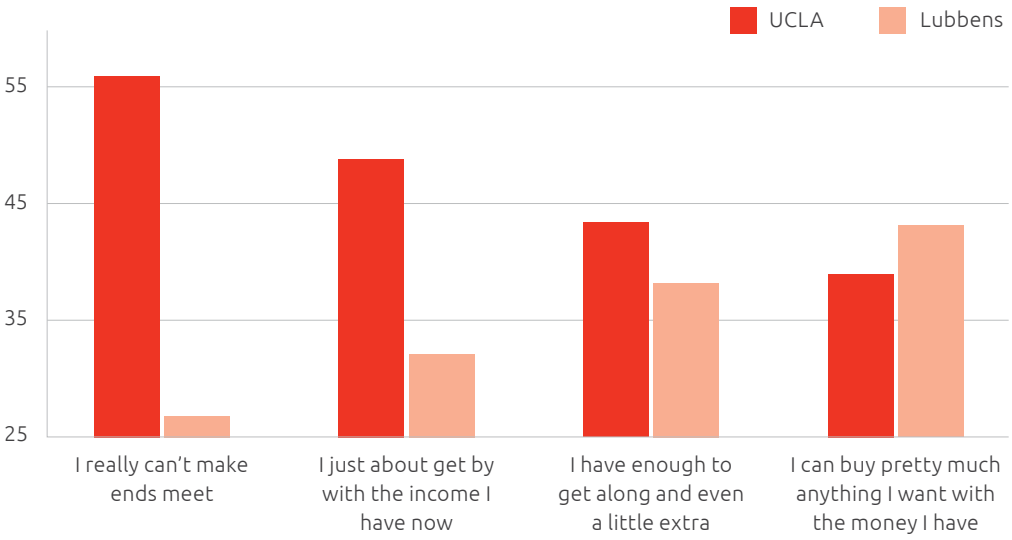

Figure 2. Mean loneliness and isolation scores between groups based on self-described economic situation

Is money a barrier to making social connection?

Overall, 37.4% reported that money was a barrier to making social connections, while 62.6% reported it was not. When this question is analysed based on the amount of reported income, a pattern emerges. Of the low income earners, 46.5% report money as a barrier, 35.8% of moderate income earners report it as a barrier, whilst only 18.3% of high income earners report it as a barrier to making connection.

Similarly, where people said "I can't really make ends meet", a majority (71.4%) reported that money was a barrier to making social connection. Conversely, only 7.7% of those who reported "I can buy pretty much anything I want with the money I have", said that money was a barrier to making social connection.

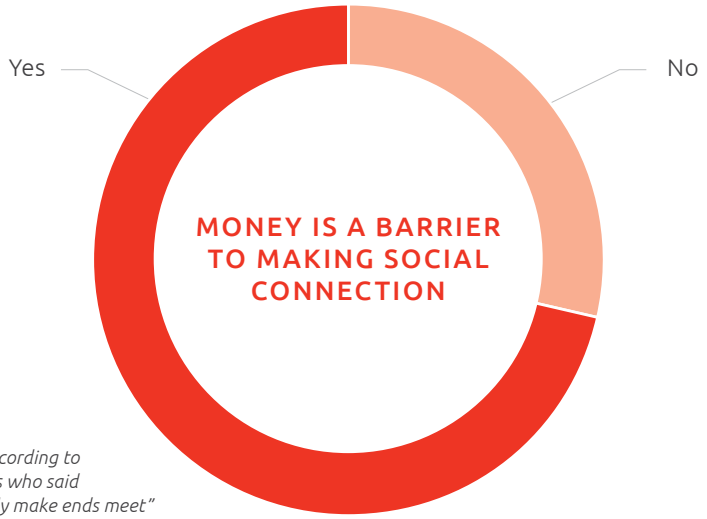

Figure 2. According to respondents who said "I can't really make ends meet"

When we asked people why money was or was not a barrier there were a number of interesting responses such as:

IS MONEY A BARRIER TO MAKING SOCIAL CONNECTIONS?

Sample of respondents who answered 'yes'	Sample of respondents who answered 'no'
"I would join more organisations if more funds were available to me"	"We are in a comfortable financial position"
"When money was really tight I couldn't go out and be a part of my old group and eventually disconnected from the group"	"True friendships are not measured by money or possessions"
"Well I cannot afford to go for coffee or a meal or a game of ten pin bowling"	"The money I have enabled me to have a sense of freedom"
"Unemployed, I can't afford to go out or catch buses"	"I lack confidence, money cannot help with that"

Discussion

The aim of the present study was to determine the prevalence and demographic differences in loneliness in an Australian sample, particularly the influence of income and economic position.

We measured loneliness in the sample using the UCLA Loneliness Scale. This scale has no set cut-offs for determining who is and is not lonely[76]. The reason for this is that it is designed to represent the real experience of loneliness which occurs on a continuum. That is, people experience loneliness to different degrees and understand the concept in different ways. The categorisation of people as 'lonely' or 'not lonely' based on an arbitrary cut-off may be unhelpful. Many people experience loneliness and it impacts most people across their lifetime. Dividing people into categories may perpetuate the stigmatisation of loneliness.

Nevertheless, in order to add to the research base in Australia and given that this is the first representative sample using the UCLA scale (that we are aware of) we have considered other empirical international research that has used this scale. When using the cut-off recommended by John Cacioppo[77] who is a respected researcher internationally in relation to loneliness[78], 66% of our sample would be considered to have a high loneliness score. When using the most conservative method of determining a cut-off 15% of our sample would be considered to have a high loneliness score. Given that our sample was representative, we can use this figure to make an estimate of the percentage of the population that are experiencing high levels of loneliness. When analysed at a population level our data suggests, as a conservative estimate, that close to 3 million Australian adults (2, 913, 500) could be experiencing high levels of loneliness. What is clear, regardless of the method being used, is that the experience of loneliness is widespread in the Australian population. We therefore urgently need to develop a national strategy to guide responses to this problem. In addition, all levels of government should commit resources to preventing and alleviating loneliness experienced by people in the community.

In terms of demographic differences, there were no differences between genders, locations and a number of other variables. This supports previous research into loneliness where gender differences are not seen using a scale such as the UCLA Loneliness Scale that doesn't mention the word loneliness. It is hypothesised that including the word loneliness could be the reason gender differences are sometimes seen in loneliness studies[79]. The similarity in average loneliness scores across geographical locations is interesting, given the hypothesis that rural areas may present unique challenges for connection with others. It may be that when comparing major cities to rural or regional areas, there are both risk and protective factors in each. Further exploration is needed to fully understand the experiences of loneliness across geographically distinct areas of Australia.

[76] *Russell, 1996*

[77] *Cacioppo & Patrick, 2008*

[78] *Bauld, 2018*

[79] *Borys & Perlman, 1985*

Our research supports other Australian findings[80] which suggest in terms of age, the Australian experience is quite different. In terms of age, loneliness was fairly even across the categories. This contrasts with international research which suggests higher levels of loneliness in specific age groups, such as young adults and older people[81]. Some have hypothesised that there are key stages of change in life where loneliness may be more likely[82]. For example, early adulthood as one transitions away from the family home. This finding also contrasts with Australian research that suggests young people are more lonely than older people[83].

A related demographic difference between groups was the significantly higher loneliness scores for those participants who are unemployed. This supports previous findings in Australian samples[84], where employment and the related social contact is seen as a protective factor against loneliness.

As hypothesised, there was a negative relationship between income and loneliness.

Qualitative data and quantitative analysis of how people describe their economic situation and whether they consider money a barrier to connection, all support the fact that lack of income is a significant factor in loneliness and a risk for social isolation. That is, those who earnt less scored more highly on loneliness and people who reported they couldn't make ends meet also had a higher loneliness score, higher risk for social isolation and thought money presented a barrier to connection.

This finding supports previous international and Australian research into the relationship between income and loneliness[85]. As hypothesised by other researchers, lack of income may present a barrier to people having the time and resources to connect with others and alleviate their loneliness.

This finding has important implications for understanding the experience of loneliness in Australia and the development of policy and interventions. Given that money is a barrier to making connections, greater consideration should be given to very low cost and free initiatives that provide community and individual connection. Qualitative responses suggest transport, cost of activities and stress related to lack of income are factors that serve to exacerbate loneliness for many Australians. In many instances community and health services are increasingly based on a user pays model. Even low-cost initiatives can be impossible for some. It is our recommendation, based on these findings, that cost and accessibility of interventions and services be considered in all community and government planning. A broader range of free services that more people on low incomes can access are required. This finding also supports the need for government increases in income support payments and relates to the current high-profile campaign calling for an increase in the Newstart Allowance[86].

[80] *Flood, 2005; Franklin & Tranter, 2008*

[81] *Dykstra, 2009*

[82] *Rokach, 2000*

[83] *Australian Psychological Society, 2018*

[84] *Flood, 2005*

[85] *Di Julio, Hamel, Munana & Brodie, 2018; Steed, Boldy, Grenade & Iredell, 2007*

[86] *Mendes, 2015*

An important note about this finding is that simply giving people more money is not the only answer to alleviating loneliness. Chronic loneliness is a complex issue with many factors to consider. Here we present one variable worth consideration, but it is certainly not the only one. For people with complex mental and physical health issues other barriers may be an equal if not greater challenge.

This study was undertaken using typical sampling methods employed by market, social and academic research as well as opinion polling. One limitation of this method is that it is possible that some of the population, for example, older seniors (80+), or those that are unable to access or use online surveys, would not be included in this sample. Any conclusions related to differences in the experience of loneliness should be considered in this light. It is important that future research utilises a combination of measures to obtain data, to ensure that those who are unable to access online tools have their views included.

Furthermore, in the present study we looked at correlational data and group comparisons, that is, we cannot determine causality of factors. We don't know the directionality in terms of how these variables interact and if one causes another (e.g. whether low income directly causes loneliness) or not. We can only say that there is a relationship between the variables. Future research that includes experimental or longitudinal designs would help to unravel these interactions.

This study adds important insights into the Australian experience of loneliness. Using a large representative sample, we can see that many are lonely and that loneliness does not discriminate, it impacts people from all walks of life. Importantly, we now have a deeper understanding of how income and loneliness are related to one another and the barriers people face in making social connections. This has important implications for future research, planning of interventions and policy development.

References

Adams, K. B., Sanders, S. & Auth, E.A. (2004). Loneliness and depression in independent living retirement communities: Risk and resilience factors. *Ageing and Mental Health, 8,* 475-485. DOI: 10.1080/13607860410001725054

Antonucci, T. C., Ajrouch, K. J. & Janevic, M. (2006). Socioeconomic status, social support, age and health. *Annals of the New York Academy of Sciences, 896,* 390- 392. http://doi-org.ezproxy1.acu.edu.au/10.1111/j.1749-6632.1999.tb08150.x

Australian Bureau of Statistics (2016). *Census of Population and Housing*. Retrieved from https://www.abs.gov.au/websitedbs/censushome.nsf/home/2016

Australian Council of Social Service & University of New South Wales (2018). Inequality in Australia. Retrieved from https://www.acoss.org.au/wp-content/uploads/2018/07/Inequality-in-Australia-2018.pdf

Australian Psychological Society, (2018). *The Australian Loneliness Report*. Retrieved from https://psychweek.org.au/wp/wp-content/uploads/2018/11/Psychology-Week-2018-Australian-Loneliness-Report.pdf

Bauld, A. (2018, March 8). *John T Cacioppo, pioneer and founder of the field of social neuroscience*, 1951- 2018. Retrieved from https://news.uchicago.edu/story/john-t-cacioppo-pioneer-and-founder-field-social-neuroscience-1951-2018

Bauman, Z. (2000) *Liquid Modernity*. Cambridge: Polity

Beer, A., Faulkner, D., Law, J., Lewin, G., Tinker, A., Buys, L., …& Chessman, S. (2016) Regional variation in social isolation amongst older Australians. *Regional Studies, Regional Science, 3,* 170-184. DOI: 10.1080/21681376.2016.1144481

Borys, S., & Perlman, D. (1985). *Gender differences in loneliness*. Personality and Social Psychology Bulletin, 11, 63–74. https://doi.org/10.1177/0146167285111006

Bound Alberti, F. (2018). This "Modern Epidemic": Loneliness as an emotion cluster and a neglected subject in the history of emotions. *Emotion Review, 10,* 242–254. https://doi.org/10.1177/1754073918768876

Burnette, D. & Myagmarjav, S. (2013). Translation and validation of the 18-item Lubben Social Network Scale with older adults in Mongolia. *International Psychogeriatrics, 25,* 1493- 1502. DOI: 10.1017/S1041610213000080X

Cacioppo, S., Capitanio, J. P., & Cacioppo, J. T. (2014). Toward a neurology of loneliness. *Psychological Bulletin, 140,* 1464–1504. https://doi-org.ezproxy2.acu.edu.au/10.1037/a0037618

Cacioppo, J. T., & Hawkley, L. C. (2009). Perceived social isolation and cognition. *Trends in Cognitive Sciences, 13,* 447- 454. doi: 10.1016/j.tics.2009.06.005

Cacioppo, J. T., & Patrick, W. (2008). *Loneliness: Human nature and the need for social connection*. New York, NY,: W W Norton & Co.

Caldwell, T. M., Jorm, A.F. & Dear, K.B. (2004). Suicide and mental health in rural, remote and metropolitan areas in Australia. *The Medical Journal of Australia, 181,* 10-14. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/15462636

Caspi, A., Harrington, H., Moffitt, T.E., Milne, B.J. & Poulton, R. (2006). Socially isolated children 20 years later: Risk of cardiovascular disease. *Archives of Paediatrics & Adolescent Medicine, 160,* 805–811. doi:10.1001/archpedi.160.8.805

Danese, A., Moffitt, T. E., Harrington, H., Milne, B. J., Polanczyk, G., Pariante, C. M., … Caspi, A. (2009). Adverse childhood experiences and adult risk factors for age-related disease: depression, inflammation, and clustering of metabolic risk markers. *Archives of Paediatrics & Adolescent Medicine, 163,* 1135–1143. doi:10.1001/archpediatrics.2009.214

Davis, S., & Bartlett, H. (2008). Review Article: Healthy ageing in rural Australia: Issues and challenges. *Australasian Journal on Ageing, 27,* 56-60. DOI: 10.1111/j.1741-6612.2008.00296.x.

de Jong-Gierveld, J. (1998). A review of loneliness: Concepts and definitions, determinants and consequences. *Reviews in Clinical Gerontology, 8,* 73-80. https://doi.org/10.1017/S0959259898008090

de Jong Gierveld, J., & Van Tilburg, T. (2010). The De Jong Gierveld short scales for emotional and social loneliness: tested on data from 7 countries in the UN generations and gender surveys. *European journal of ageing, 7,* 121–130. doi:10.1007/s10433-010-0144-6

Department of Health and Aged Care (2001). *Measuring Remoteness: Accessibility/ Remoteness Index of Australia (ARIA) Revised Edition*. Retrieved from https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-historicpubs-hfsocc-ocpanew14a.htm

Di Julio, B., Hamel, L., Munana, C. & Brodie, M (2018). *Loneliness and social isolation in the United States, the United Kingdom, and Japan: An international survey.* Retrieved from https://www.kff.org/report-section/loneliness-and-social-isolation-in-the-united-states-the-united-kingdom-and-japan-an-international-survey-introduction/

Dykstra, P. A. (2009). Older adult loneliness: myths and realities. *European Journal of Ageing, 6,* 91–100. doi:10.1007/s10433-009-0110-3

Eisenberger, N., Lieberman, M. D. & Williams, K.D. (2003). Does rejection hurt? An FMRI study of social exclusion. *Science, 10,* 290- 292. DOI: 10.1126/science.1089134

Elmer, E. (2018) *Social Isolation and Loneliness Report*. City of Vancouver Seniors' Advisory Committee. Retrieved from http://www.vancouverseniorsadvisory.ca/loneliness/

Engel, R. (2017). Measuring loneliness: Are there method factors?, *The American Journal of Geriatric Psychiatry, 25,* 1184-1185, https://doi.org/10.1016/j.jagp.2017.05.022.

Flood, M. (2005). *Mapping Loneliness in Australia.* The Australian Institute. Retrieved from https://www.tai.org.au/sites/default/files/DP76_8.pdf

Franklin, A. (2012), A lonely society? Loneliness and liquid modernity in Australia. *Australian Journal of Social Issues, 47,* 11-28. doi:10.1002/j.1839-4655.2012.tb00232.x

Franklin, A. & Tranter, B. (2008). *Loneliness in Australia.* Paper No.13, Housing and Community Research Unit. Retrieved from https://apo.org.au/sites/default/files/resource-files/2008/12/apo-nid4070-1140601.pdf

Friends for Good (2018). *Time We Talked*. Retrieved from https://www.friendsforgood.org.au/reports/FriendsForGood_ResearchReport_TimeWeTalked.pdf

Fulton, L. & Jupp, B. (2015). *Investing to tackle loneliness—a discussion paper*. Social Finance, London. Retrieved from https://www.socialfinance.org.uk/resources/publications/investing-tackle-loneliness-discussion-paper

Goldsmith, S. K., Pellmar, T.C., Kleinman, A.M. Bunney, W.E. (2002). *Reducing Suicide: A National Imperative*. Washington, DC: National Academy Press.

Goossens, L., Klimstra, T., Luyckx, K., Vanhalst, J., & Teppers, E. (2014). Reliability and validity of the Roberts UCLA Loneliness Scale (RULS-8) with Dutch-speaking adolescents in Belgium. *Psychologica Belgica, 54,* 5-18. doi:10.5334/pb.ae. ISSN 2054-670X.

Hagerty, B. M. & Williams, R. A. (1999). The effects of sense of belonging, social support, conflict and loneliness on depression. *Nursing Research, 48,* 215-219. http://dx.doi.org/10.1097/00006199-199907000-00004

Hauge, S. & Kirkevold, M. (2010) Older Norwegians' understanding of loneliness. *International Journal of Qualitative Studies on Health and Well-Being, 5,* http://dx.doi.org/10.3402/qhw.v5i1.4654

Hawkley, L.C. & Cacioppo, J.T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioural Medicine, 40,* 218- 227. DOI: 10.1007/s12160-010-9210-8

Hawkley, L.C., Masi, C.M., Berry, J.D., Cacioppo, J.T. (2006). Loneliness is a unique predictor of age-related differences in systolic blood pressure. *Psychology and Aging, 21,* 152–164. DOI: 10.1037/0882-7974.21.1.152

Hawkley, L. C., Thisted, R. A., & Cacioppo, J. T. (2009). Loneliness predicts reduced physical activity: cross-sectional & longitudinal analyses. *Health Psychology, 28,* 354–363. doi:10.1037/a0014400

Hawkley, L.C., Preacher, J.T., Cacioppo, J.T. (2010). Loneliness impairs daytime functioning but not sleep duration. *Health Psychology, 29,* 124–129. DOI: 10.1037/a0018646

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T. & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science, 10,* 227–237. https://doi.org/10.1177/1745691614568352

Lifeline (2016). *Loneliness Survey.* Retrieved from https://www.lifeline.org.au/about-lifeline/media-centre/media-releases/2016-articles/8-out-of-10-australians-say-loneliness-is-increasing

Liu, B. S., & Rook, K. S. (2013). Emotional and social loneliness in later life: Associations with positive versus negative social exchanges. *Journal of Social and Personal Relationships, 30,* 813–832. https://doi.org/10.1177/0265407512471809

Lubben, J., & Gironda, M. (2003). Centrality of social ties to the health and well-being of older adults. In B. Berkman & L. Harooytan (Eds.), *Social work and health care in an aging world* (pp. 319-350). New York, NY: Springer.

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

McDaid, D. & Park, A. (2017) Making the economic case for tackling loneliness in later life. *Innovation in Aging, 1,* 953. DOI: 10.1093/geroni/igx004.3428

McWhirter, B. T. (1990). Loneliness: A review of current literature, with implications for counseling and research. *Journal of Counseling and Development, 68,* 417. http://dx.doi.org.ezproxy1.acu.edu.au/10.1002/j.1556-6676.1990.tb02521.x

Mendes, P. (2015) The changing nature of the Australian welfare state: A critical analysis of the ACOSS campaign to increase the Newstart Allowance, *Australian Journal of Political Science, 50,* 427-441. DOI: 10.1080/10361146.2015.1065957

Mullins, L. C., Elston, C. H. & Gutkowski, S. M. (1996). Social determinants of loneliness among older Americans. *Genetic, Social, and General Psychology Monographs, 122,* 453- 473. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/8976599

New Economics Foundation (2017). *The cost of loneliness to UK employers*. Retrieved from https://neweconomics.org/2017/02/cost-loneliness-uk-employers

Nutley, S. (2003). Indicators of transport and accessibility problems in rural Australia. *Journal of Transport Geography, 11,* 55- 71. http://doi.org/10.1016/S0966-6923(02)00052-2

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

Relationships Australia (2018). *The Australian Experience of Loneliness*. Retrieved from https://www.relationships.org.au/news/blog/the-australian-experience-of-loneliness

Rokach, A. (2000). Loneliness and the Life Cycle. *Psychological Reports, 86,* 629–642. https://doi.org/10.2466/pr0.2000.86.2.629

Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): reliability, validity and factor structure. *Journal of Personality Assessment, 66,* 20-40. http://dx.doi.org/10.1207/s15327752jpa6601_2

Russell, D. W., Peplau, L.A. & Ferguson, M.L. (1978). Developing a measure of loneliness. *Journal of Personality Assessment, 42,* 290-294. DOI: 10.1207/s15327752jpa4203_11

Shankar, A., McMunn, A., Demakakos, P., Hamer, M., & Steptoe, A. (2017). Social isolation and loneliness: prospective associations with functional status in older adults. *Health Psychology, 36,* 179- 187. DOI: 10.1037/hea0000437

Shiovitz-Ezra, S. & Ayalon, L. (2010). Situational versus chronic loneliness as risk factors for all-cause mortality. *International Psychogeriatrics, 22*, 455-462. DOI: 10.1017/S1041610209991426

Steed, L., Boldy, D., Grenade, L. & Iredell, H. (2007), The demographics of loneliness among older people in Perth, Western Australia. *Australasian Journal on Ageing, 26,* 81-86. doi:10.1111/j.1741-6612.2007.00221.x

Steptoe, A., Owen, N., Kunz-Ebrecht, S.R. & Brydon L. (2004) Loneliness and neuroendocrine, cardiovascular, and inflammatory stress responses in middle-aged men and women. *Psychoneuroendocrinology, 29,* 593–611. DOI: 10.1016/S0306-4530(03)00086-6

Tanskanen, J. & Anttila, T. (2016). A prospective study of social isolation, loneliness, and mortality in Finland. *American Journal of Public Health, 106,* 2042-2048. DOI: 10.2105/AJPH.2016.303431

Thurston, R.C. & Kubzansky, L.D. (2009). Women, loneliness, and incident coronary heart disease. *Psychosomatic Medicine, 71,* 836–842. DOI: 10.1097/PSY.0b013e3181b40efc

Valtorta, N. & Hanratty, B. (2012). Loneliness, isolation and the health of older adults: do we need a new research agenda? *Journal of the Royal Society of Medicine, 105,* 518–522. doi:10.1258/jrsm.2012.120128

Wilson, R.S., Krueger, K.R., Arnold, S.E., Schneider, J.A., Kelly, J.F., Barnes, L.L.,…Bennett, D.A. (2007). Loneliness and risk of Alzheimer disease. *Archives of General Psychiatry, 64,* 234–240. DOI: 10.1001/archpsyc.64.2.234

Appendices

Appendix 1: UCLA-LS

LONELINESS SCALE	SCORING			
Statement	**Never**	**Rarely**	**Sometimes**	**Always**
1. How often do you feel that you are "in tune" with the people around you?	4	3	2	1
2. How often do you feel that you lack companionship?	1	2	3	4
3. How often do you feel that there is no one you can turn to?	1	2	3	4
4. How often do you feel alone?	1	2	3	4
5. How often do you feel part of a group of friends?	4	3	2	1
6. How often do you feel that you have a lot in common with the people around you?	4	3	2	1
7. How often do you feel that you are no longer close to anyone?	1	2	3	4
8. How often do you feel that your interests and ideas are not shared by those around you?	1	2	3	4
9. How often do you feel outgoing and friendly?	4	3	2	1
10. How often do you feel close to people?	4	3	2	1
11. How often do you feel left out?	1	2	3	4
12. How often do you feel that your relationships with others are not meaningful?	1	2	3	4
13. How often do you feel that no one really knows you well?	1	2	3	4
14. How often do you feel isolated from others?	1	2	3	4
15. How often do you feel you can find companionship when you want it?	4	3	2	1
16. How often do you feel that there are people who really understand you?	4	3	2	1
17. How often do you feel shy?	1	2	3	4
18. How often do you feel that people are around you but not with you?	1	2	3	4
19. How often do you feel that there are people you can talk to?	4	3	2	1
20. How often do you feel that there are people you can turn to?	4	3	2	1

Source: Russell, D. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. Journal of Personality Assessment, 66, 20-40.

Appendix 2: Sample demographics

AGE GROUP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 to 24	121	11.9	11.9	11.9
	25 to 29	88	8.6	8.6	20.5
	30 to 34	98	9.6	9.6	30.1
	35 to 39	90	8.8	8.8	38.9
	40 to 44	82	8.0	8.0	47.0
	45 to 49	91	8.9	8.9	55.9
	50 to 54	83	8.1	8.1	64.0
	55 to 59	81	7.9	7.9	72.0
	60 to 64	88	8.6	8.6	80.6
	65 +	198	19.4	19.4	100.0
	Total	**1020**	**100.0**	**100.0**	

LOCATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sydney	213	20.9	20.9	20.9
	Other NSW	115	11.3	11.3	32.2
	Melbourne	194	19.0	19.0	51.2
	Other VIC	58	5.7	5.7	56.9
	Brisbane	105	10.3	10.3	67.2
	Other QLD	105	10.3	10.3	77.5
	Adelaide	60	5.9	5.9	83.3
	Other SA	19	1.9	1.9	85.2
	Perth	80	7.8	7.8	93.0
	Other WA	20	2.0	2.0	95.0
	Hobart	10	1.0	1.0	96.0
	Other TAS	10	1.0	1.0	97.0
	ACT	20	2.0	2.0	98.9
	NT	11	1.1	1.1	100.0
	Total	**1020**	**100.0**	**100.0**	

TOTAL PRE-TAX INCOME RECEIVED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Negative income	9	.9	.9	.9
	Nil income	54	5.3	5.3	6.2
	$1- $149 per week / $1- $7,799 per year	53	5.2	5.2	11.4
	$150- $299 per week / $7,800- $15,599 per year	82	8.0	8.0	19.4
	$300- $399 per week / $15,600- $20,799 per year	92	9.0	9.0	28.4
	$400- $499 per week / $20,800- $25,999 per year	91	8.9	8.9	37.4
	$500- $649 per week / $26,000 - $33,799 per year	88	8.6	8.6	46.0
	$650- $799 per week / $33,800- $41,599 per year	85	8.3	8.3	54.3
	$800- $999 per week / $41,600- $51,999 per year	99	9.7	9.7	64.0
	$1,000- $1,249 per week / $52,000- $64,999 per year	97	9.5	9.5	73.5
	$1,250- $1,499 per week / $65,000- $79,999 per year	69	6.8	6.8	80.3
	$1,500- $1,749 per week / $78,000- $90,999 per year	59	5.8	5.8	86.1
	$1,750- $1,999 per week / $91,000- $103,999 per year	46	4.5	4.5	90.6
	$2,000- $2,999 per week / $104,000- $155,999 per year	63	6.2	6.2	96.8
	$3,000 or more per week / $156,000 or more per year	33	3.2	3.2	100.0
	Total	**1020**	**100.0**	**100.0**	

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	493	48.3	48.3	48.3
	Female	526	51.6	51.6	99.9
	Prefer not to say	1	.1	.1	100.0
	Total	**1020**	**100.0**	**100.0**	

Appendix 3: Study measures

Participants completed an online questionnaire. The questionnaire included basic demographic questions such as gender, age, education, sexuality, employment status, language spoken, income and postcode. A number of other questions were included, those relevant to this research project were:

Self-rated economic situation. This question was taken from Mullins, Elston and Gutkowski[87] and gives respondents four statements, they are asked to select which most closely corresponds to their economic situation (e.g. "I really can't make ends meet").

Money as a barrier to connection. The question "Is money a barrier to you making social connections?" was included with two-response options (yes or no). As a follow-up, a qualitative response was sought (regardless of the answer, respondents were asked: "how so?"). The purpose of this question was to allow an open response to gather self-reported data on how/ if money is a barrier to connection, as hypothesised.

UCLA Loneliness Scale Version 3 (UCLA-LS[88]). The UCLA-LS is a 20-item measure of subjective feelings of loneliness. 10 of the 20 items are reverse scored. Items (e.g. "How often do you feel isolated from others?") are scored on a 4-point Likert scale of frequency, ranging from 1 (never) to 4 (always). This is a widely used measure, found in approximately 80% of empirical studies into loneliness[89]. It has been shown to be internally consistent (α = .89 - .94), have high test-retest reliability over a year (r = .73) and convergent and construct validity is supported[90].

Lubben Social Network Scale- 18 (LSNS-18)[91]. The LSNS-18 is an 18-item self-report scale that measures levels of social engagement. Questions are divided into three sections related to family, neighbours and friends (6 items in each section). Items related to the size of networks (e.g. "how many relatives do you see or hear from at least once a month?") are rated on 6-point Likert scales, ranging from 0 (none) to 5 (nine or more). Items related to support reciprocity in networks (e.g. "when one of your friends has an important decision to make, how often do they talk to you about it?") are rated on 6-point Likert scales, from 0 (never) to 5 (always). Frequency of contact (e.g. "how often do you see or hear from the friend with whom you have the most contact?") is measured on 6-point scales, from 0 (less than monthly) to 5 (daily). Scores for the overall scale and each subscale are equally weighted with higher scores indicating greater social engagement overall or in each domain. The LSNS-18 has been used across various samples and has high internal consistency for the overall scale (α = .82) and for the subscales of neighbours (α = .80), friends (α = .87) and family (α = .82)[92]. Correlation coefficients also suggest acceptable internal reliability and a strong three-factor structure. Various studies support the convergent and content validity of the LSNS-18 as a measure of social network engagement[93].

[87] *Mullins, Elston & Gutkowsky, 1996*

[88] *Russell, 1996*

[89] *Goossens et al., 2014*

[90] *Russell, 1996*

[91] *Lubbens & Gironda, 2003*

[92] *Lubbens & Gironda, 2003*

[93] *Burnette & Myagmarjav, 2013*

Appendix 4: Statistical analysis

Statistical analyses of demographic differences of loneliness (measured by the UCLA-LS) involved one-way ANOVAs with Tukey post hoc tests. Reported differences between groups (age, employment status and income) were significant at $p < .05$.

There was a small but statistically significant negative correlation between income categories (reported pre-tax income) and loneliness $r = -.137$, $p < .001$.

When groups were categorised based on self-reported economic position, a one-way ANOVA suggested a statistically significant difference in group means based on the UCLA-LS and Lubbens scores ($p < .001$).

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