

Social isolation, loneliness and wellbeing

2

Social isolation, loneliness and wellbeing

Key messages

- Loneliness and social isolation were concerns before the onset of the COVID-19 pandemic but have been exacerbated in the subsequent years.
- More people aged 15–24 now report feeling lonely than people aged 55 and over, with young females most likely to experience loneliness.
- People across all age groups appear to be having less social contact from 2001 to 2021.
- Social isolation and loneliness are among the many factors that can be detrimental to a person's wellbeing.

Social isolation and loneliness can harm both mental and physical health and may affect life satisfaction (Box 2.1). They are concerning issues in Australia due to the impact they have on peoples' lives and wellbeing.

Loneliness has been linked to premature death, poor physical and mental health (Holt-Lunstad et al. 2015), greater psychological distress (Manera et al. 2022) and general dissatisfaction with life (Schumaker et al. 1993).

Social isolation has been linked to mental illness, emotional distress, suicide, the development of dementia, premature death, poor health behaviours, smoking, physical inactivity and poor sleep – as well as biological effects, including high blood pressure and impaired immune function (Cacioppo et al. 2002 and Grant et al. 2009 in Holt-Lunstad et al. 2015). Social isolation is also associated with greater psychological distress (Manera et al. 2022) and sustained decreases in feelings of wellbeing (Box 2.2) (Shankar et al. 2015). Conversely, more frequent social contact is associated with better overall health (Botha 2022).

Box 2.1: Difference between social isolation and loneliness

Social isolation 'means having objectively few social relationships or roles and infrequent social contact' (Badcock et al. 2022:7). It differs from loneliness, which is a 'subjective unpleasant or distressing feeling of a lack of connection to other people, along with a desire for more, or more satisfying, social relationships' (Badcock et al. 2022:7). The 2 concepts may, but do not necessarily, coexist (Badcock et al. 2022; Relationships Australia 2018) – a person may be socially isolated but not lonely, or socially connected but feel lonely.

Some measures implemented in response to the COVID-19 pandemic, such as physical isolation and lockdowns, have had the potential to exacerbate pre-existing risk factors for social isolation and loneliness, such as living alone (Lim et al. in press). The pandemic highlighted the extent and impacts of loneliness and social isolation, a picture that will continue to unfold as more data from 2020 onwards become available.

Box 2.2: What is wellbeing?

Wellbeing is a concept that draws on both mental health and physical health. It has been defined as:

‘... the combination of feeling good and functioning well; the experience of positive emotions such as happiness and contentment as well as the development of one’s potential, having some control over one’s life, having a sense of purpose, and experiencing positive relationships’ (Ruggeri et al. 2020:1).

Governments and policy advisers are becoming increasingly interested in wellbeing. This is because – beyond more traditional measures such as morbidity, mortality and economic status – wellbeing can indicate ‘how people perceive their life is going from their own perspective’ (CDC 2018). There is no consensus, however, on a single definition of wellbeing; it is often conceived of as multi-dimensional, integrating several factors that influence mental and physical health outcomes. For example, the framework to assess population wellbeing produced by the Organisation for Economic Co-operation and Development (OECD) includes, among several others, dimensions of income and wealth, health, social connections, subjective wellbeing, environment quality and civic engagement (OECD 2023).

Although wellbeing is influenced by social isolation and loneliness, it is far broader than just these 2 factors. This article largely focuses on subjective wellbeing and, in particular, the measure of life satisfaction. Life satisfaction is a widely used and robust measure of how someone broadly feels about their life circumstances (for example, see Biddle et al. 2022).

Who experiences social isolation and loneliness?

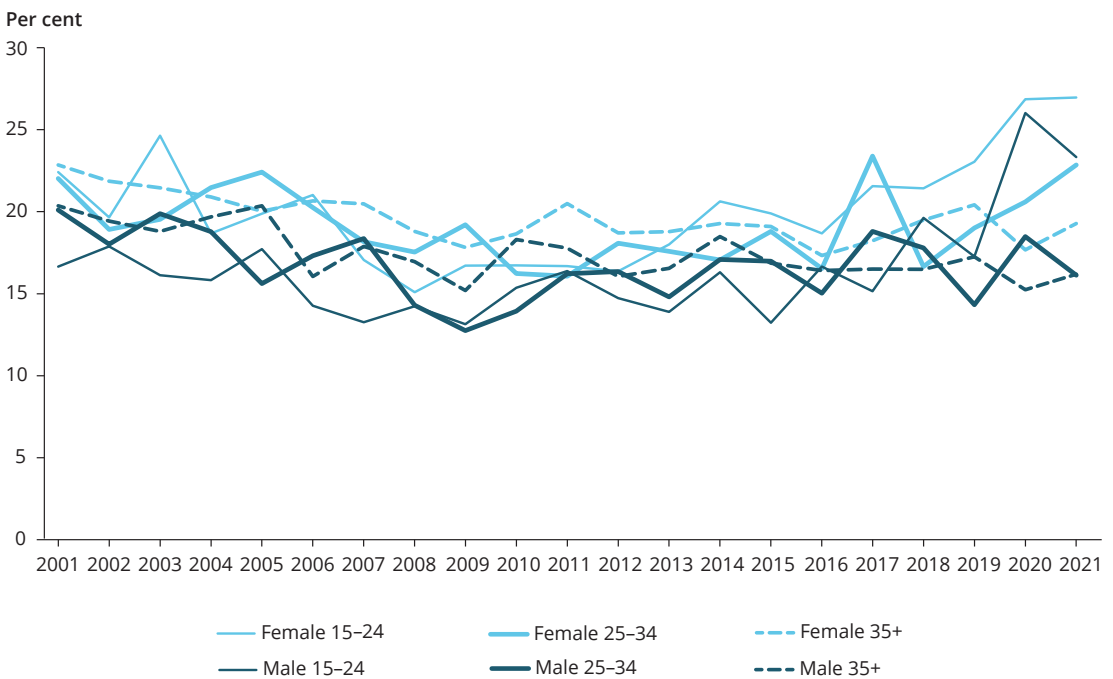
Loneliness among Australians was already a concerning issue before the COVID-19 pandemic, to the extent that it has been described as one of the most pressing public health priorities in Australia (Ending Loneliness Together 2022).

Loneliness

An increasing number of people aged 15–24, especially young females, have reported experiencing loneliness since 2012. As of 2021, 1 in 4 females aged 15–24 agreed with the statement ‘I often feel very lonely’, the highest proportion of any age group (Figure 2.1). Notably, the frequency of loneliness in this age group remains elevated as of 2021, while it appears to be either steady or reducing in most other age groups. Further, this may be an underestimate of the true extent of loneliness in these age groups due to stigma associated with loneliness (Lim et al. in press).

Figure 2.1: Loneliness in females aged 15–24 remains elevated

Proportion of respondents reporting ‘I often feel very lonely’, by sex and age group, 2001 to 2021

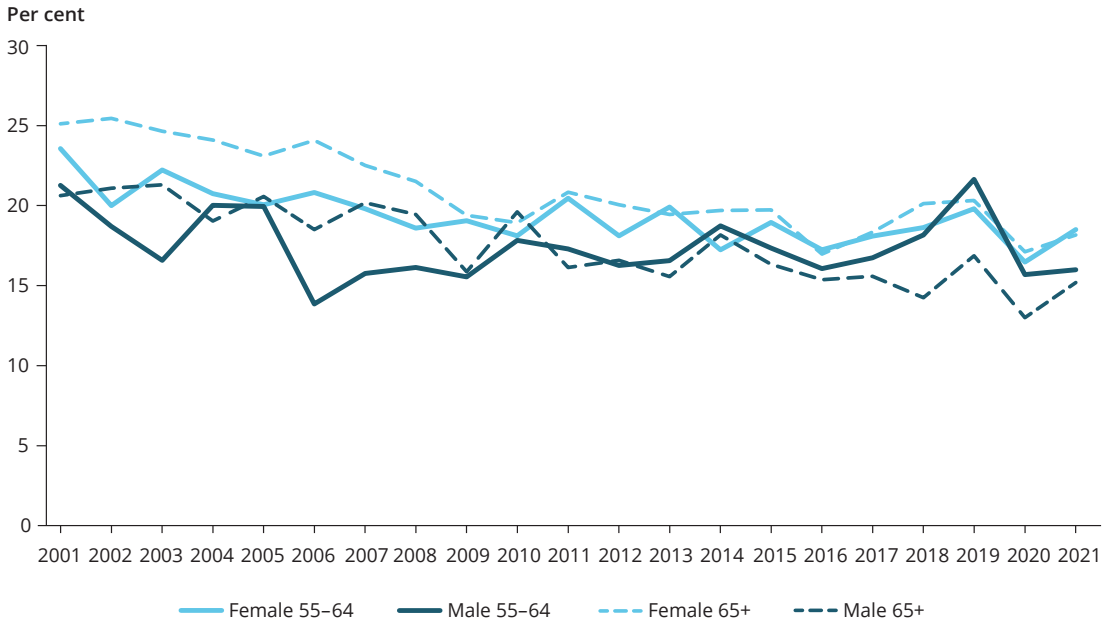


Source: AIHW analysis of Household and Labour Dynamics in Australia (HILDA) data, waves 1–21.

In a more positive development, the frequency of people aged 55 and over reporting loneliness has been steadily declining (Figure 2.2).

Figure 2.2: Loneliness has reduced among people aged 55 and over

Proportion of respondents reporting 'I often feel very lonely', by sex and age group, 2001 to 2021



Source: AIHW analysis of HILDA data, waves 1–21.

Data from the COVID-19 Impact Monitoring Survey showed that, in April 2020, during the nationwide lockdown, almost half (46%) of respondents reported feeling lonely at least some of the time in the past week (Box 2.3). Loneliness has generally declined since this time and fluctuated only slightly in the 2 years since, but, in August 2022 more than one-third (36%) of Australian adults reported experiencing loneliness at least some of the time in the week before the survey. Throughout the pandemic, young people (aged 18–24) were more likely than other age groups to report the highest levels of loneliness (Biddle et al. 2022).

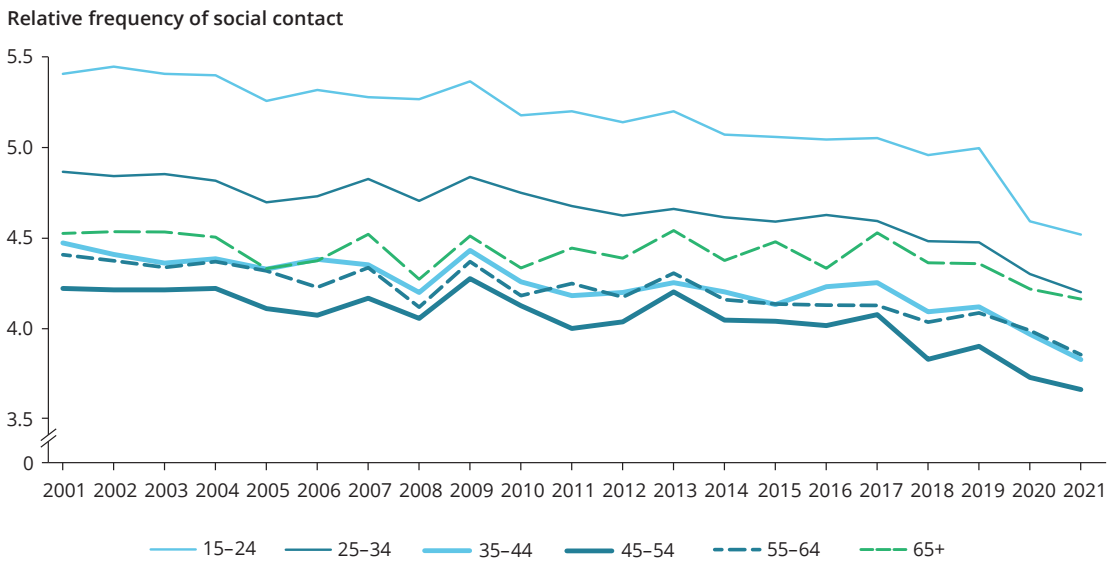
Australia’s available data on loneliness do not allow for reliable international comparisons. In a recent systematic review of loneliness in 113 countries led by Australian researchers, Australian data could not be compared with those of other countries due to a lack of comparable prevalence data – except for the adolescent age group (Surkalim et al. 2022). The OECD has no comparable data for Australia on its measures of ‘people feeling lonely’ and ‘people feeling left out of society’ (OECD 2022).

Social isolation

The frequency of social contact, which may include both in-person and online contact (Box 2.4), has been declining across all age groups in Australia for at least 2 decades, with data from the HILDA survey showing a decline of 13% overall from 2001 to 2021. The average person now gets together socially with friends or relatives about once a month. Although people aged 15–24 reported the highest frequency of social contact overall, they have also shown the greatest relative decline over this period. On average, people in this age group have gone from socialising 2 or 3 times a month to about once a month (Figure 2.3).

Figure 2.3: Average frequency of social contact has declined across all age groups

Average frequency of social contact by age group, 2001 to 2021



Note: Numbers refer to responses to the HILDA question 'In general, about how often do you get together socially with friends or relatives not living with you?', with lower numbers indicating less frequent social contact. Refer to Botha (2022) for further details.

Source: AIHW analysis of HILDA data, wave 21 for year 2021; (Botha 2022) for years 2001 to 2020.

Analysis of data from the 2 participating cohorts of young people (born between 2003 and 2004) in the Longitudinal Study of Australian Children (LSAC) undertaken by the AIHW align with findings from the HILDA survey.

In 2021, the younger cohort (then aged 16–17) reported a higher level of loneliness than the older cohort (aged 18–19). Females also reported a higher level of loneliness than males. Consistent with other surveys, females reported a higher level of social support than males.

Box 2.3: Domestic and family violence

Family, domestic and sexual violence is a major health and welfare issue in Australia, occurring across all socioeconomic and demographic groups, but predominantly affecting women and children (AIHW 2022).

Social isolation is a well-recognised tactic of coercive control used by perpetrators to control their victims (Boxall and Morgan 2021). It ensures the victim does not hear other people's perspectives: perpetrators control the information the victim receives, reduce their help-seeking opportunities, and control the victim's ability to leave the abusive relationship (Stark 2007). Recent studies on the impact of the COVID-19 pandemic on Australians are identifying some adverse outcomes of stay-at-home orders associated with increased social isolation that put some women and children at higher risk of experiencing family violence (Morgan and Boxall 2020; Pfitzner et al. 2022).

An online survey of 166 practitioners conducted in Victoria during the 2020 lockdowns revealed that women's experiences of intimate partner violence worsened because of their increased social isolation, which reduced their ability to seek external help and support (Pfitzner et al. 2022). This trend was also identified in other cities and countries, with perpetrators using the social isolation provided by the stay-at-home orders to increase abusive behaviours towards victims within their homes (Piquero et al. 2021). An Australian study suggests the combination of increased social isolation and economic stress associated with the COVID-19 pandemic did increase the risks of domestic and family violence for women in current cohabiting relationships (Morgan and Boxall 2020).

Between 2019 and 2020, the proportion of Australians participating in groups fell – from 51% to 46% for social groups, from 25% to 21% for community groups and from 9% to 7% for civic and political groups (ABS 2021). The proportion of Australians who had face-to-face contact at least once a week with family and friends outside their household dropped markedly in 2020 (42% compared with 68% in 2019). This likely reflects the impact of the COVID-19 pandemic. The Australian Bureau of Statistics (ABS) projects that the number of people living alone will increase by almost 1 million between 2016 and 2041 (ABS 2019).

According to data from the COVID-19 Impact Monitoring Survey (Biddle et al. 2022), in February 2020, about 1 in 50 (2.1%) Australians reported never (that is, less than 'less than once a month') meeting socially with friends, colleagues or relatives. During the April 2020 nationwide lockdown, this figure reached 49.4%. By April 2022, while Australians were reporting greater levels of social interaction than in the previous 2 years, social interaction had still not returned to pre-pandemic levels. In August 2022, about 1 in 20 (4.8%) of Australians reported never meeting socially – more than double

pre-pandemic levels. Over 1 in 3 (35.4%) Australians reported meeting others socially once a month or less, compared with almost 1 in 4 (23.8%) in February 2020.

Box 2.4: Role of social media

Whether social media has potential benefits or negative impacts on people's experiences of social isolation has been discussed since the advent of this medium. There is no straightforward relationship, however, between social media use and experiences of social isolation and loneliness, whether positive or negative.

Researchers have identified some positive impacts of how social media can help people feel socially connected, especially adolescents (aged 11–19) who are looking for peers online to boost their psychosocial wellbeing, discuss identity development and encourage a sense of belonging (Allen et al. 2014). Other research has showed that using social media benefited young people (aged under 21) who experienced higher levels of social anxiety by increasing their ability to socialise, reducing their feelings of social isolation (Lin et al. 2017).

Even though adolescents can use social media to create supportive communities, research shows that the relationship between its use and loneliness can be dynamic and bidirectional. When it is used to escape physical social interactions, feelings of loneliness were found to increase (Nowland et al. 2017). Further, Nowland and colleagues (2017) posited that people experiencing loneliness may benefit from external support with their use of the Internet to ensure they engage in existing friendships and learn how to develop new ones online to reduce feelings of loneliness and social isolation.

More research has emerged since the COVID-19 pandemic started that investigates the use of social media by people of all ages and their experiences of social isolation, but findings are not always positive. For example, a study of people living in Norway, the United States of America, the United Kingdom and Australia looked at the impact of people's use of social media during the pandemic. The researchers found an association between emotional distress and more frequent use of social media (Geirdal et al. 2021).

Another international study investigating current research between online social networking and mental health outcomes for people aged 50 and over found that social media enhanced communication with family and friends, provided greater independence and self-efficacy, aided in the creation of new communities online, helped to form positive associations with wellbeing and life satisfaction, and was associated with decreased depressive symptoms (Chen et al. 2021).

As more studies are conducted through the pandemic and beyond, an understanding of how social media affects feelings of social isolation and loneliness should become clearer.

Preventing and reducing social isolation and loneliness

Participating in paid work and caring for others have been proposed as safeguards against loneliness. Engaging in volunteer work and maintaining active memberships of sporting or community organisations are also associated with reduced social isolation (Flood 2005). However, it is unclear whether community engagement can consistently act as a protective factor against loneliness. For example:

- one study found that loneliness is lower in people who spend at least some time each week volunteering (Flood 2005)
- another study found no relationship between loneliness and volunteering, or between loneliness and socialising and participating in sport and community organisations (Baker 2012).

For people aged 25–44, being in a relationship is a greater protective factor against loneliness for men than for women (Baker 2012). Women living with others and women living alone report similar levels of loneliness, while men living alone report higher levels of loneliness than men living with others (Flood 2005).

Although social isolation and loneliness are now well-recognised public health concerns, major gaps remain in understanding what works to resolve them (Smith and Lim 2020). Due to our diverse social needs, preferences and resources, there is no ‘one size fits all’ solution (Box 2.5) (Ending Loneliness Together 2022).

Wellbeing

Life satisfaction is a subjective measure simply of how satisfied a person is with their life, and is considered to be a key component of overall wellbeing (OECD 2020). From 2001 to 2018, according to the HILDA Survey, life satisfaction remained relatively stable (Wilkins et al. 2020). However, based the ABS General Social Survey (ABS 2021), overall life satisfaction (ranging from 0 ‘not at all satisfied’ to 10 ‘completely satisfied’) for Australians aged 15 and over fell from 7.5 in 2019 to 7.2 in 2020. Average life satisfaction in 2020 was low for people:

- aged 15–24 (6.9)
- living with a mental health condition (5.8)
- living with a long-term health condition (6.9)
- who described themselves as gay, lesbian or bisexual (6.3).

Box 2.5: Companion animals

Pets can play an integral part in people's lives, regardless of the person's culture, profession or age. Companion animals are one source of external support that can bring both physical and mental health benefits (Brooks et al. 2016). All types of companion animals may contribute to reducing social isolation and feelings of loneliness (Brooks et al. 2018; Kretzler et al. 2022).

Multiple studies have found an association between pet ownership and lower experiences of social isolation, particularly for children (Christian et al. 2020; Hartwig and Signal 2020; Kretzler et al. 2022). Further, research suggests that companion animals may positively influence experiences for older people (aged 60 and over) by increasing their sense of purpose and meaning, facilitating increased social interaction, reducing loneliness and improving emotional resilience (Zhe Hui Gan et al. 2019), as well as being potentially a protective factor against suicide (Young et al. 2020a). Owning a pet increases the opportunity for people to get to know their neighbours and for social interactions and forming friendships (Wood et al. 2015).

Brooks and colleagues (2018) systematically reviewed 17 studies that investigated the relationship between companion animals, specifically domestic animals, and the assistance these animals provided in helping people to manage their mental health conditions. The quantitative studies produced mixed findings, with people experiencing positive, negative and neutral impacts of their companion animal on their personal mental health.

Qualitative studies suggest, however, that people with mental health conditions may benefit from the direct support their companion animals provide. This support includes helping their owners to manage their mental health condition, reducing people's stress and regulating emotions – particularly beneficial during times of crisis, improving people's quality of life, providing a consistent source of comfort, and aiding social and community interactions. Companion animals were found to help mitigate feelings of social isolation and loneliness by providing physical warmth and companionship, and opportunities for non-judgemental communication for their owners. Further, they may offer a distraction or disruption when their owners experience panic attacks and other symptoms of mental illness (Brooks et al. 2018). On the other hand, negative impacts included difficulties with the daily commitment of pet ownership and the psychological stress when losing a companion pet.

Since the start of the COVID-19 pandemic, studies have mostly shown that the association between pet ownership, loneliness and social isolation has strengthened (Kretzler et al. 2022). One study found that cats gave their people an outlet for stress through the strong bonds they had established with owners, and the affection and comfort they provided, thus acting as a buffer to the social isolation created by the lockdowns (Currin-McCulloch et al. 2021). Dogs provided their people with daily reinforcement of positive behaviours such as routine, exercise and play, which all contributed to decreased feelings of social isolation (Bussolari et al. 2021).

It is not yet clear whether this strong relationship between people and their pets at the levels seen in the early years of the COVID-19 pandemic will persist in the future (Hughes et al. 2021; Young et al. 2020).

During the pandemic, there were ‘... as large swings in many wellbeing measures since perhaps the second world war’ (Biddle and Gray 2022:6). The COVID-19 Impact Monitoring Survey, conducted by researchers from the Australian National University (ANU), charted trends in the wellbeing of Australians (aged 18 and over) throughout the pandemic and into late 2022 (Box 2.6). This research was based on longitudinal data comparable with pre-pandemic waves of data collection made through the quarterly survey, ANUPoll (Biddle et al. 2022). Notably, because infection and mortality rates in Australia had been relatively low during the first 2 years of the COVID-19 pandemic, the researchers were able to show that an increase in the stringency of pandemic-related restrictions had an association with individual wellbeing and loneliness (Biddle et al. 2022).

Various questions about wellbeing were posed to respondents in the COVID-19 Impact Monitoring Survey, including on life satisfaction. In each wave of data collection, respondents were asked ‘Overall, how satisfied are you with life as a whole these days?’ with a response of ‘0’ meaning ‘not at all satisfied’ through to ‘10’ meaning ‘completely satisfied’.

In January 2020, when parts of southern and eastern Australia had recently experienced or were still experiencing major bushfires and high levels of air pollution due to bushfire smoke, average life satisfaction sat at 6.9, lower than it had been in October 2019 (7.1) (Biddle et al. 2022). Average life satisfaction has varied widely during the pandemic, with the lowest levels observed in April 2020 (coinciding with the first nationwide lockdown) and in August 2021 (6.5) (Biddle et al. 2022), when much of New South Wales and Victoria were under lockdown. Between January and May 2022, life satisfaction levels consistently increased (though they never reached pre-pandemic levels), before tapering off between August (~6.8) and October 2022 (6.7) (Biddle and Gray 2022).

The COVID-19 Impact Monitoring data showed that by October 2022 economic concerns were becoming increasingly important in explaining the wellbeing of Australians as price increases associated with rates of inflation not seen in Australia since the 1990s became a key determinant of life satisfaction. Household income in Australia declined in real terms by about 3.1% between April and October 2022, suggesting a decline in living standards (Biddle and Gray 2022). Life satisfaction in October 2022 was 10% lower for people who thought price increases were a very big problem (6.4) compared to those who did not (7.1), and 14% lower for those in the bottom income quintile (6.2) compared with the top income quintile (7.2). In a period of rising inflation, income matters more for life satisfaction, and therefore wellbeing, than it did early in the pandemic (Biddle and Gray 2022).

Box 2.6: Can we build our way to less loneliness and social isolation, and greater wellbeing?

The built environment in which people reside is thought to shape loneliness, social isolation and wellbeing more generally by providing the context in which they can pursue social engagement and other activities important in life such as employment, education and social interactions with friends and family. Empirical studies across the world have shown various features of the built environment, such as distances to services, walkability of surroundings, perceived safety of an environment and availability of green space, are related to reported levels of loneliness (Lam and Wang 2022). The links between transport disadvantage – which has been defined as ongoing difficulties with access to transport (Rosier and Macdonald 2011) – and social inclusion are also well established by international research (Ma et al. 2018).

A recent Australian study based on HILDA data from 2013 to 2017 found that the odds of becoming lonely after 4 years were inversely related to the amount of high-value green space in a locality. Adults living in neighbourhoods where at least 30% of land was parks, reserves and woodlands had a 26% lower chance of experiencing loneliness than adults in areas with less than 10% green space. For people who live alone, the relationship was even stronger, with the odds of becoming lonely halving. These results were found even when accounting for competing explanations, such as income, disability, age and employment (Astell-Burt et al. 2022).

As Ma and colleagues (2018) explain, Australian cities have ‘grown up’ since the industrial revolution and in the era of the private car. This has created urban environments where car ownership can be critical for transport. Some people, especially people on lower incomes, tend to live in less expensive outer suburbs with fewer amenities and services (including public transport); hence, they are driven into expensive private car ownership to maintain social connection and employment. The inability to own a car potentially contributes to transport disadvantage, a circumstance associated with increased social exclusion (measured by access to social help), as well as lower physical and mental health, and subjective wellbeing (Ma et al. 2018). Conversely, walkable neighbourhood environments with increased accessibility to amenities and services are associated with less transport disadvantage and increased social inclusion.

While considerable care is required in making international comparisons of subjective wellbeing, the data show that, on measures of subjective wellbeing and social support, Australia ranks towards the middle against other OECD countries. In 2019, on a scale of 0 to 10, Australians had an average life satisfaction of 7.5 (Department of the Treasury 2022). This was slightly higher than the 2018 OECD average of 7.4, ranking Australia 18th of 33 OECD countries on the measure of life satisfaction (OECD 2020). While the share of people reporting they have friends or relatives who can assist them has fallen from 97% in 2006 to 92% in 2021, on this measure Australians report higher levels of social support than the average (90%) and Australia ranks 19th of 38 OECD countries (OECD 2020).

The Department of the Treasury has developed a wellbeing framework to inform government policy. See the *Measuring what matters* statement at <https://treasury.gov.au/publication/p2023-mwm> for more information.

Further reading

Australian Institute of Health and Welfare – *Suicide and self-harm monitoring* at: <https://www.aihw.gov.au/suicide-self-harm-monitoring/data/covid-19>

Bankwest Curtin Economics Centre – *Stronger together: loneliness and social connectedness in Australia* at: <https://bcec.edu.au/publications/stronger-together-loneliness-and-social-connectedness-in-australia/>

Department of the Treasury – *Measuring what matters* at: <https://treasury.gov.au/publication/p2023-mwm>

References

- ABS (Australian Bureau of Statistics) (2019) *Household and Family Projections, Australia* [online document], ABS, accessed 28 February 2023. <https://www.abs.gov.au/statistics/people/population/household-and-family-projections-australia/latest-release>
- (2021) *General Social Survey: summary results, Australia* [online document], ABS, accessed 10 November 2022. [https://www.abs.gov.au/statistics/people/people-and-communities/general-social-survey-summary-results-australia/latest-release#:~:text=Key%20statistics,similar%20to%202019%20\(56%25\)](https://www.abs.gov.au/statistics/people/people-and-communities/general-social-survey-summary-results-australia/latest-release#:~:text=Key%20statistics,similar%20to%202019%20(56%25))
- AIHW (Australia Institute of Health and Welfare) (2022) *Family, domestic and sexual violence* [online document], AIHW, accessed 19 January 2023. <https://www.aihw.gov.au/reports/domestic-violence/family-domestic-sexual-violence-data/contents/about>
- Allen KA, Ryan T, Gray DL, McInerney DM and Waters L (2014) 'Social media use and social connectedness in adolescents: the positives and potential pitfalls', *The Educational and Developmental Psychologist*, 31(1):18–31, doi:10.1017/edp.2014.2.
- Astell-Burt T, Hartig T, Eckermann S, Niewenhuijsen M, McMunn A, Frumkin H and Feng X (2022) 'More green, less lonely? A longitudinal cohort study', *International Journal of Epidemiology*, 51(1):99–110, doi:10.1093/ije/dyab089.10.1093/ije/dyab089.
- Badcock JC, Holt-Lunstad J, Garcia E, Bombaci P and Lim MH (2022) *Position statements on addressing social isolation and loneliness and the power of human connection*, Global Initiative on Loneliness and Connection, accessed 27 April 2023. <https://www.gilc.global/general-6>
- Baker D (2012) *All the lonely people: loneliness in Australia, 2001–2009*, The Australia Institute, Canberra, Institute paper no. 9, accessed 27 April 2023. <https://australiainstitute.org.au/report/all-the-lonely-people-loneliness-in-australia-2001-2009/>
- Biddle N and Gray M (2022) *Economic and other wellbeing in Australia – October 2022*, ANU Centre for Social Research Methods, Canberra.
- Biddle N, Edwards B, Gray M and Rehill P (2022) *Wellbeing outcomes in Australia as lockdowns ease and cases increase – August 2022*, ANU Centre for Social Research Methods, Canberra.
- Botha F (2022) 'Social connection and social support', in Wilkins et al., *The Household, Income and Labour Dynamics in Australia Survey: selected findings from waves 1 to 20*, Melbourne Institute: Applied Economic and Social Research, Melbourne.
- Boxall H and Morgan A (2021) *Statistical Bulletin 30 – experiences of coercive control among Australian women*, Australian Institute of Criminology, Canberra.

Brooks HL, Rushton K, Lovell K, Bee P, Walker L, Grant L and Rogers A (2018) 'The power of support from companion animals for people living with mental health problems: a systematic review and narrative synthesis of the evidence', *BMC Psychiatry*, 18(31), doi:10.1186/s12888-018-1613-2.

Brooks H, Rushton K, Walker S, Lovell K and Roger A (2016) 'Ontological security and connectivity by pets: a study in the self-management of the everyday lives of people diagnosed with a long-term mental health condition', *BMC Psychiatry*, 16(409), doi:10.1186/s12888-016-1111-3.

Bussolari C, Currin-McCulloch J, Packman W, Kogan L and Erdman P (2021) "'I couldn't have asked for a better quarantine partner!': experiences with companion dogs during Covid-19", *Animals*, 11(2):330, doi:10.3390/ani11020330.

CDC (Centers for Disease Control and Prevention) (2018) *Well-being concepts* [online document], CDC, accessed 13 January 2023. <https://www.cdc.gov/hrqol/wellbeing.htm>

Chen E, Wood D and Ysseldyk R (2021) 'Online social networking and mental health among older adults: a scoping review', *Canadian Journal on Aging / La Revue Canadienne Du Vieillessement*, 41(1):26–39, doi:10.1017/S0714980821000040.

Christian H, Mitrou F, Cunneen R and Zubrick SR (2020) 'Pets are associated with fewer peer problems and emotional symptoms, and better prosocial behaviour: findings from the longitudinal study of Australian children', *The Journal of Paediatrics*, 220:200–206, doi:10.1016/j.peds.2020.01.012.

Currin-McCulloch J, Bussolari C, Packman W, Kogan L and Erdman P (2021) 'Grounded by purrs and petting: experiences with companion cats during Covid-19', *Human-Animal Interaction Bulletin*, doi:10.1079/hai.2021.0009.

Department of the Treasury (2022) *Detailed indicator briefs*, Department of the Treasury, Australian Government, accessed 12 May 2023. <https://treasury.gov.au/consultation/measuring-what-matters-2022>

Ending Loneliness Together (2022) *Strengthening social connection to accelerate social recovery* [white paper], WayAhead, Sydney, accessed 27 April 2023. https://endingloneliness.com.au/_trashed-3/

Flood M (2005) *Mapping loneliness in Australia* [discussion paper 76], The Australia Institute, Canberra, accessed 27 April 2023. <https://australiainstitute.org.au/report/mapping-loneliness-in-australia/>

Geirdal AO, Ruffolo M, Leung J, Thygesen H, Price D, Bonsaksen T and Schoultz M (2021) 'Mental health, quality of life, wellbeing, loneliness and use of social media in a time of social distancing during the COVID-19 outbreak. A cross-country comparative study', *Journal of Mental Health*, 30(2):148–155, doi:10.1080/09638237.2021.1875413.

- Hartwig E and Signal T (2020) 'Attachment to companion animals and loneliness in Australian adolescents', *Australian Journal of Psychology*, 72(4):337–346, doi:10.1111/ajpy.12293.
- Holt-Lunstad J, Smith TB, Baker M, Harris T and Stephenson D (2015) 'Loneliness and social isolation as risk factors for mortality: a meta-analytic review', *Perspectives on Psychological Science*, 10(2):227–237, doi:10.1177/1745691614568352.
- Hughes AM, Braun L, Putnam A, Martinez D and Fine A (2021) 'Advancing human-animal interaction to counter social isolation and loneliness in the time of Covid-19: a model for an interdisciplinary public health consortium', *Animals*, 11(8):2325, doi.org/10.3390/ani11082325
- Kretzler B, Konig H and Hajek A (2022) 'Pet ownership, loneliness, and social isolation: a systematic review', *Social Psychiatry and Psychiatric Epidemiology*, 57:1935–1957.
- Lam J and Wang S (2022) 'Built Environment and Loneliness Among Older Adults in South East Queensland, Australia', *Journal of Applied Gerontology*, 41(11):2382–2391, doi:10.1177/07334648221114345.
- Lim MH, Manera KE, Owen KB, Phongsavan P and Smith BJ (in press) 'Chronic and episodic loneliness and social isolation: prevalence and sociodemographic analyses from a longitudinal Australian survey', *Research Square*, doi:10.21203/rs.3.rs-1607036/v1.
- Lin X, Li S and Qu C (2017) 'Social network sites influence recovery from social exclusion: individual differences in social anxiety', *Computers in Human Behaviour*, 75:538–546, doi:10.1016/j.chb.2017.05.044.
- Ma L, Kent JL and Mulley C (2018) 'Transport disadvantage, social exclusion, and subjective well-being: the role of the neighborhood environment – evidence from Sydney, Australia', *The Journal of Transport and Land Use*, 11(1):31–47, doi:10.5198/jtlu.2018.1008.
- Manera KE, Smith BJ, Owen KB, Phongsavan P and Lim MH (2022) 'Psychometric assessment of scales for measuring loneliness and social isolation: an analysis of the household, income and labour dynamics in Australia (HILDA) survey', *Health and Quality of Life Outcomes*, 20:40, doi:10.1186/s12955-022-01946-6.
- Morgan P and Boxall H (2020) 'Social isolation, time spent at home, financial stress and domestic violence during the COVID-19 pandemic', *Trends & Issues in Crime and Criminal Justice*, 609, Australian Institute of Criminology, Australian Government, Canberra.
- Nowland R, Necka EA and Cacioppo J (2017) 'Loneliness and social Internet use: pathways to reconnection in a digital world?', *Perspectives on Psychological Science*, 13(1), doi:10.1177/1745691617713052.

OECD (Organisation for Economic Co-operation and Development) (2020), *How's life? 2020: measuring well-being*, OECD Publishing, Paris, accessed 9 June 2023, doi.org/10.1787/9870c393-en

— (2022) *COVID-19 and well-being: life in the pandemic – Australia*, OECD Publishing, Paris, accessed 27 April 2023. <https://www.oecd.org/wise/covid-19-and-well-being-1e1ecb53-en.htm>

— (2023) *Measuring well-being and progress: well-being research* [online document], OECD website, accessed 13 January 2023. <https://www.oecd.org/wise/measuring-well-being-and-progress.htm>

Pfitzner N, Fitz-Gibbon K and True J (2022) 'When staying home isn't safe: Australian practitioner experiences of responding to intimate partner violence during COVID-19 restrictions', *Journal of Gender-Based Violence*, 6(2):297–314, doi:10.1332/239868021X16420024310873.

Piquero AR, Jennings WG, Jemison E, Kaukinen C and Knaul FM (2021) 'Domestic violence during the COVID-19 pandemic: evidence from a systematic review and meta-analysis', *Journal of Criminal Justice*, 74, doi:10.1016/j.crimjus.2021.101806.

Relationships Australia (2018) *Is Australia experiencing an epidemic of loneliness? Findings from 16 waves of the Household Income and Labour Dynamics of Australia Survey*, Relationships Australia, Canberra, accessed 27 April 2023. <https://relationships.org.au/document/is-australia-experiencing-an-epidemic-of-loneliness/>

Rosier K and McDonald M (2011) *The relationship between transport and disadvantage in Australia* [policy and practice paper] [PDF 1002.56 KB], Australian Institute of Family Studies, Melbourne, accessed 9 June 2023. <https://aifs.gov.au/resources/policy-and-practice-papers/relationship-between-transport-and-disadvantage-australia>

Ruggeri K, Garcia-Garzon E, Maguire A, Matz S and Huppert F (2020) 'Well-being is more than happiness and life satisfaction: a multidimensional analysis of 21 countries', *Health and Quality of Life Outcomes*, 18(192):1–16, doi:10.1186/s12955-020-0143-y.

Schumaker JF, Shea JD, Monfries MM and Growth-Marnat G (1993) 'Loneliness and life satisfaction in Japan and Australia', *Journal of Psychology*, 127(1):65–71.

Shankar A, Rafnsson SB and Steptoe A (2015) 'Longitudinal associations between social connections and subjective wellbeing in the English Longitudinal Study of Ageing', *Psychology & Health*, 30(6):686–698, doi:10.1080/08870446.2014.979823.

Smith B and Lim M (2020) 'How the COVID-19 pandemic is focusing attention on loneliness and social isolation', *Public Health Research & Practice*, 30(2):e3022008.

Stark E (2007) *Coercive control: how men entrap women in personal life*, Oxford University Press, New York.

Surkalim DL, Luo M, Eres R, Gebel K, van Buskirk J, Bauman A and Ding D (2022) 'The prevalence of loneliness across 113 countries: systematic review and meta-analysis', *BMJ*, 376:e067068, doi:10.1136/bmj-2021-067068.

Wilkins R, Botha F, Vera-Toscano E and Wooden M (2020) *The Household, Income and Labour Dynamics in Australia Survey: selected findings from waves 1 to 18*, Melbourne Institute: Applied Economic & Social Research, University of Melbourne.

Wood L, Martin K, Christian H, Nathan A, Lauritsen C, Houghton S, Kawachi I and McCune S (2015) 'The pet factor – companion animals as a conduit for getting to know people, friendship formation and social support' *PLoS ONE*, 10(4), doi:10.1371/journal.pone.0122085.

Young J, Bowen-Salter H, O'Dwyer L, Stevens K, Nottle C and Baker A (2020a) 'A qualitative analysis of pets as suicide protection for older people', *Anthrozoos*, 33(2), 191–205, doi:10.1080/08927936.2020.1719759.

Young J, Pritchard R, Nottle C and Banwell H (2020) 'Pets, touch, and COVID-19: health benefits from non-human touch through times of stress', *Journal of Behavioural Economics for Policy*, 4(2), 25–33.

Zhe Hui Gan G, Hill AM, Yeung P, Keesing S and Netto JA (2019) 'Pet ownership and its influence on mental health in older adults', *Aging and Mental Health*, 24(10), 1605–1612, doi:10.1080/13607863.2019.1633620.

