

Loneliness and the Social Determinants of Mental Health in Australia

Michelle H Lim

michelle.h.lim@sydney.edu.au

The University of Sydney

Yasmine Hooper

The University of Western Australia

Leanne Lester

The University of Western Australia

Lisette Kaleveld

The University of Western Australia

Alex Brown

National Centre for Indigenous Genomics, Australian National University and The Kids Research Institute Australia

Lisa Brophy

La Trobe University

Research Article

Keywords: loneliness, mental health, mental wellbeing, social cohesion, community

Posted Date: September 24th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10546034/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Background

Loneliness has now been identified as a global public health priority. Individuals who report loneliness report increased psychological distress compared to those who are not lonely and social determinants influence the experience of loneliness.

Methods

A quantitative examination of the relationships between loneliness and both micro-level and macro-level factors including concerns about social determinants of mental health, psychological distress, mental wellbeing, social cohesion and trust and support utilisation from an Australian community survey sample.

Results

3,757 survey respondents were included in the analysis. We found that the number of people living in a house was identified as a critical factor influencing loneliness, with single person households experiencing the greatest loneliness. The type of relationships that make up a household also influence loneliness, with couples experiencing less loneliness than non-couples. Non-binary respondents are also more vulnerable to higher levels of loneliness, though this should be interpreted with caution given the small sample size. Those who were 65–74 years old also reported significantly increased loneliness along with those who lived in outer regional areas and those living with a mental health issue. People who identified as Aboriginal and/or Torres Strait Islander reported significantly more loneliness than non-Aboriginal and/or Torres Strait Islander individuals.

Conclusion

Overall, structural and societal influences and macro forces may negatively affect the way we relate to and interact with each other. This research provides a rationale to also consider the differential impacts across various communities and social groups and not simply focus on micro person-level experiences.

Introduction

Loneliness has now been identified as a global public health priority (1), characterised by a subjective feeling of distress that arises when a person feels that their current relationships do not meet their needs (2). Historically, loneliness has been assumed to be a personal matter (3) with solutions focused on trying to address only the individual's thoughts, feelings, and behaviours (4). While these solutions can be important, new insights and approaches to addressing loneliness emerge when we shift away

from an individualised lens and instead consider loneliness across macro, meso, and micro levels. This broader perspective highlights how structural, social, as well as relational dynamics shape experiences of loneliness.

Loneliness is increasingly understood as shaped by a complex interplay of factors, including health, personal circumstances, and broader social and environmental conditions (5). Therefore, taking a socioecological approach can offer a holistic and meaningful way to understand and respond to loneliness.

Factors that influence loneliness are thought to be similar to the social determinants of mental health (6), with the relationship between loneliness and wellbeing well-established. Individuals who report loneliness report increased psychological distress compared to those who are not lonely (7, 8). Loneliness has been shown to predict more severe individual distress such as depression and social anxiety (9) and is associated with a higher incidence of people experiencing other mental health challenges (10).

As our understandings of loneliness have expanded, so too have perspectives on addressing it, moving beyond purely individual-focused interventions to including the value of community and social cohesion (11, 12). Emerging research has found that social cohesion may buffer the negative impacts of loneliness on health (13), and can protect against experiences of loneliness, even in contexts of increased social vulnerability such as migrant communities (14). Additionally, factors such as discrimination, social support and access to resources can all influence experiences of loneliness (6). What is less clear is the extent to which loneliness may go unrecognised, both as a co-occurring issue within a mental health service delivery setting, as well as in personal lives, relationships and communities. People experiencing loneliness might also benefit from non-clinical, community-based social supports (such as safe spaces, youth groups, support groups and men's sheds), rather than seeking help primarily through mental health services.

The aim of the study is to build on this understanding of loneliness as being influenced by wider factors including community-level and country-specific contextual factors, socioeconomic status, and neighbourhood deprivation (15).

Study Aim and Hypotheses

We aimed to quantitatively examine the relationships between loneliness and both micro-level and macro-level factors including the social determinants of mental health, psychological distress, mental wellbeing, social cohesion and trust, and support utilisation (across community supports as well as mental health services), from an Australian community survey sample recruited from the Assisting Communities through Direct Connection (ACDC) project.

We hypothesised that loneliness would be associated with poorer mental wellbeing, higher psychological distress, lower social cohesion and trust, and increased concerns across the social determinants of

mental health. It was expected that people who were lonely were more likely to be utilising both community-based supports and mental health services.

Methods

Ethics approval

was obtained from the University of Western Australia Human Research Ethics Committee. Data were collected as part of the ACDC Project. The ACDC Project was an initiative of Community Mental Health Australia (CMHA). Individuals first provided verbal consent and confirmed this via online consent obtained (using an ipad) before participation.

Participants

A total of 3,757 survey respondents were included in the analysis. Around one third of respondents were aged 25–44, and a further third were aged 55–74. Eight per cent of respondents were aged 18–24 and 11.2% were over 75 years old. Most respondents were female (57.6%), Australian born (75.8%), and lived in a household with other people (55.8%). Approximately nine per cent of respondents identified as Aboriginal and/or Torres Strait Islander. Forty-one per cent of respondents resided in a major city, 33.2% in an inner regional area, and the remaining 24.1% in an outer regional area. Table 1 provides an overview of demographic data collected from the current sample.

Table 1
Sample descriptives (n = 3,757)

Demographic Variable	N	%
Age		
18–24	285	7.6
25–34	615	16.4
35–44	632	16.8
45–54	555	14.8
55–64	605	16.2
65–74	619	16.6
75–85	356	9.5
Older than 85	64	1.7
Missing	26	0.7
Gender		
Female	2165	57.6
Male	1540	41.0
Other	18	0.5
Missing	34	0.9
Indigenous status		
Aboriginal and/or Torres Strait Islander	328	8.7
Not Aboriginal and/or Torres Strait Islander	3289	87.5
Missing	140	3.7
Place of birth		
Born in Australia	2848	75.8
Born outside of Australia	909	24.2
Number of people in household		
Single person	915	24.4
Couple	759	20.2
At least two people*	1336	35.6
<i>Note.</i> * Non-couples and households greater than two people.		

Demographic Variable	N	%
Missing	747	19.9
Household type		
Single adult	915	24.4
Couple/partner	759	20.2
Single adult & children	509	13.5
Couple & children	675	18.0
Unrelated adults	152	4.0
Missing	747	19.9
Remoteness of community (ARIA Index)		
Major city	1555	41.4
Inner regional	1249	33.2
Outer regional	905	24.1
Missing	48	1.3
Living with mental health issues (self-identified)		
Yes	1173	31.2
No	2012	53.6
Missing	572	15.2
<i>Note.</i> * Non-couples and households greater than two people.		

Data collection procedures

Data were collected by teams of paid ‘People Connectors’. People Connectors were recruited and trained to doorknock homes in selected suburbs, having conversations with willing householders about mental health, wellbeing, and support needs, and conducting a survey at the door on an iPad, or leaving a paper-based survey for later collection. Householders were provided with both general and localised information about options for mental health supports. The current study draws on cross-sectional data collected from survey respondents across 17 communities (‘sites’) across Australia.

The ACDC Project sites were selected through an expression of interest process and completed by delivery partner organisations. The selected communities featured diverse characteristics across physical and geographical landscapes, remoteness and distance to services and social dis/advantage. See Appendix for further detail on the geographical location participants were recruited.

The delivery partner organisations and teams of People Connectors had significant influence over where to focus doorknocking efforts. Each site was provided with statistical data (e.g., local-level data from the Australian Bureau of Statistics) to help make informed decisions about suburb-level diversity and community needs. However, decisions about where to doorknock, and which streets and suburbs to focus on, were informed by the local knowledge of the People Connectors and the organisation.

Some suburbs were identified as having a specific need, for example, poor access to mental health services, or residents likely to be underutilising existing services (e.g., culturally and linguistically diverse communities). In many communities, People Connectors were very motivated to reach people living in the least advantaged areas, while in other communities People Connector teams believed that people living in more middle class or more privileged suburbs were equally important to talk to because mental health challenges are experienced by individuals in all social contexts.

As part of the visit, householders were invited to complete a survey – either through an interview with People Connectors at the doorstep via an iPad device, or a paper-based survey that they could complete themselves (collected by the People Connectors in the following days). People were also offered the opportunity to complete the survey online, via a Qualtrics link provided on the ACDC Project webpage. Most surveys (95.4%) were completed via the People Connectors (interviewed, or paper-based) and the remaining respondents opted to do a survey online via the anonymous survey link.

Measures

Demographics

Information was collected on age, gender, Indigenous status, number of people living in the household, country of birth, and mental health issues (respondents were asked, “Do you currently have, or are you living with, any mental health issues) using a dichotomous rating scale – i.e., yes/no (with unsure/prefer not to say also an option).

Site information

The study included 17 sites. Sites were categorised as per the Australian Bureau of Statistics Accessibility and Remoteness Index of Australia (ARIA; Major City, Inner Regional, and Outer Regional) to determine the size and locality of the community, including characteristics such as distance to services. Communities are presented in Appendix A.

Loneliness

The UCLA 3-item Loneliness Scale (16), an adaptation of the Revised UCLA Loneliness Scale (R-UCLA; (17), measures self-report loneliness using three items: “How often do you feel that you lack

companionship?”, “How often do you feel left out?”, and “How often do you feel isolated from others?”. Items were rated on a 3-point scale with anchor points “hardly ever” (1), “some of the time” (2), “often” (3) where higher scores reflected greater loneliness (scores ranging from 3–9).

Concerns about social determinants of mental health

Respondents were asked how concerned they had been in the last 12 months about the following individual social determinants: housing (cost, security or availability); unemployment or not having enough work; financial stress (not having enough money); being subject to discrimination, prejudice or stigma; physical health issues; alcohol or drug use; COVID-19 pandemic; not having enough food to feed myself or my family; concerns about climate change; and family and/or relationships. These items were derived from consultation with the project steering committee, people with lived and living experience, and measured using a four-point scale (1 = no problem, 2 = a small problem, 3 = a medium problem, 4 = a large problem).

Psychological distress

Self-report psychological distress was measured using the Kessler Psychological Distress Scale (K10; (18, 19) and the adapted Kessler Psychological Distress Scale for Indigenous respondents (K5; (20) Respondents were asked to select the frequency or extent to which they had experienced feelings of distress, anxiety, or depressed mood within the past month. The K10 comprised 10 statements representing depression, stress, and anxiety symptoms (e.g., “feeling nervous”, “feeling hopeless”), rated on a scale of one (none of the time) to five (all the time). Scores range from 10 to 50 were categorised based on severity of distress: low distress (10–15), moderate distress (16–21), high distress (22–29) and very high distress (30–50).

The K5 was developed for use in the social and emotional wellbeing module of the National Aboriginal and Torres Strait Islander Health Survey and was established through consultation with Aboriginal peoples (21). If survey respondents identified as Aboriginal and/or Torres Strait Islander, they completed the K5, rather than the K10. Modifications to the scale included omission of K10 items 2, 3, 5, 8 and 9 (creating a 5-item measure), as well as slight word changes to remaining items to improve the understanding of statements (“restless or fidgety” was changed to “restless and jumpy”; “hopeless” to “without hope”; and “past four weeks” to “last four weeks”). Akin to the K10, scores were categorised based on severity of distress (McNamara et al., 2014). Ratings for all items were summed to produce a total score. K10/K5 scores can only be calculated (by summation of item scores) where there are responses for all 10 items, or five items for the K5.

Mental wellbeing

The World Health Organization Five Wellbeing Index (WHO-5; (22) was used to measure respondents’ self-report mental wellbeing. Five statements, including, “I have felt relaxed and calm” and “My daily life has been filled with things that interest me” are rated on a scale from zero (at no time) to five (all of the time). Respondents are asked to consider the statements in the context of the last two weeks. Scores

were summed and multiplied by 4 to create a total score. A score of 100 represented the best imaginable wellbeing and zero represented the worst imaginable wellbeing. For clinical populations, a score equal to or less than 50 has been used to screen for depression, and in the general population, mean scores for the WHO-5 range from 53.7 to 70.1 across several European countries (23).

Social cohesion and trust

Social cohesion and trust were measured by Sampson et al.'s (1997) scale of five conceptually related items (24). This includes: "people around here are willing to help their neighbours," "this is a close-knit neighbourhood," "people in this neighbourhood can be trusted," "people in this neighbourhood generally don't get along with each other," and "people in this neighbourhood do not share the same values" (the last two statements were reverse coded). Items were rated on a five-point scale with anchor-points "strongly disagree" to "strongly agree". Higher scores represented greater social cohesion and trust.

Current engagement with support(s)

To identify respondents' engagement with different supports, activities and services, participants were asked: "In the last three months did you receive help for your mental health and wellbeing from a *mental health professional or a service*? (e.g., a counselling support, a GP, or psychologist?)" and "In the last three months have you accessed *any local community supports* that help you with your mental health and wellbeing? (e.g., a safe space, a support group, youth group, men's shed?)". Response options were dichotomous – yes/no (with unsure/prefer not to say also an option). Four discrete groups were created: a) no support utilisation b) using both local community supports and help from a mental health professional or service; c) using local community supports only; and d) using support from a mental health professionals or services only.

Statistical analysis

Data screening

Analyses were conducted using SPSS v29 (IBM). Surveys with incomplete or missing UCLA loneliness scores, and 26 surveys that were not completed in English, were excluded from the analysis due to research integrity considerations. The final sample was $n = 3,757$. Reliability analysis tested the internal consistencies of the measures using data obtained in the current study. The WHO-5, K10, K5 and UCLA 3-item loneliness scale all yielded high consistency ($\alpha = .90, .94, .91$, respectively).

Univariate analysis

Analyses were conducted using SPSS v29 to test for potential differences in loneliness scores across several demographic variables – age, gender, Indigenous status, place of birth, and size of community. Analysis also examined mean loneliness scores between support types to identify any significant differences across these groups. Significance testing used a Bonferroni adjusted alpha level of 0.006 (.05/9) to control for the possibility of Type-1 error.

Social determinants score

Exploratory Factor Analysis (EFA) was used to determine the underlying factor structure of individual social determinants scales. Final estimates of communalities were iterated from squared multiple item correlations to convergence. Kaiser's criterion (Eigenvalues ≥ 1.0), together with Cattell's scree test, were used to determine the number of underlying factors. An orthogonal varimax rotation was performed on the principal components and an overall score was calculated for each underlying factor by summing the factor scores identified from the data.

Confirmatory Factor Analysis (CFA) models using the Comparative Fit Index (CFI), Tucker Lewis Index (TLI) and Standardised Root Mean Square Residual statistics were examined to determine model fit of the hypothesised factor (25) using STATA v17. Cronbach's alpha was used to measure the reliability of the whole-school wellbeing indicator factors and the mental health scales. The level of significance was set at $p < 0.05$.

EFA and CFA were used to determine the underlying factors for individual social determinants. Two factors were found for individual social determinants. The first factor involved eight items (housing cost, security, or availability; unemployment or not having enough work; financial stress (not having enough money); being subject to discrimination, prejudice or stigma; physical health issues; alcohol or drug use; not having enough food to feed myself or my family; and family and/or relationships) with factor loadings ranging from 0.532–0.828 (alpha = 0.864). The item 'social isolation or loneliness' was excluded from the factor because loneliness was the dependent variable. The second factor, involving COVID-19 pandemic concerns and concerns about climate change, produced factor loadings ranging from 0.567–0.692 (alpha = 0.503).

Cronbach's alpha measure of reliability was 'good' ($0.8 \leq \alpha < 0.9$) for the first factor of individual social determinants and the community social determinants factor. However, the second individual social determinant factors were considered 'unsatisfactory' and hence excluded from further analysis. An average score was calculated from the factor items to produce an individual social determinant score, with higher scores representing greater concern. Confirmatory factor analysis was used for factor validation with all goodness of fit measures indicating a good model fit (CFI ≥ 0.9 , TLI ≥ 0.9 , SRMR < 0.8) (25). An average score was calculated from the factor items to produce an individual and community social determinant score, with higher scores representing greater concern.

Multi-level regression models

A multi-level regression model using STATA v17 was used to determine the demographic (age, gender, Indigenous status, place of birth, number of people in household, mental health issues) predictors of loneliness. Further separate multi-level regression models explored social cohesion (social cohesion and trust measure) and mental health (WHO-5, K10, K5) predictors of loneliness, after controlling for individual demographic variables and site (ARIA) variables. A random intercept was included in each regression model to account for the clustering within the 17 ACDC Project sites.

Results

Univariate analysis

Mean reported loneliness score of the current sample was 4.74 ($SD = 1.85$; range = 3–9). Group differences across these demographic variables were examined. The highest loneliness score was observed for respondents who fell outside of the gender binary ('other' gender; $M = 6.50$; $SD = 1.72$; $n = 18$) and significant differences in mean loneliness scores were identified between the three gender categories we examined.

Respondents who identified as Aboriginal and/or Torres Strait Islander reported significantly greater loneliness than those who did not identify as Aboriginal and/or Torres Strait Islander ($p < 0.001$). Single person households and non-coupled households of two persons or more reported significantly higher loneliness than couples ($p < 0.001$). Unrelated adults, single adults, and single adults with children reported significantly higher loneliness than couples/partners and couples with children ($p < 0.001$). People who lived in outer regional areas reported significantly higher loneliness than people who lived in major cities and inner regional areas ($p < 0.001$). The lowest loneliness score was observed for respondents who reported not having or living with a mental health issue ($M = 4.08$; $SD = 1.47$, $n = 2012$). Respondents living with a mental health issue reported significantly higher loneliness compared to those not living with a mental health issue.

Table 2 presents participant demographics by loneliness score. Differences between mean loneliness scores were identified across all demographic variables, excluding place of birth.

Table 2
Demographics by loneliness

Variable	<i>n</i>	Loneliness score	
		<i>M</i>	<i>SD</i>
Total sample		4.74	1.85
Age**			
18–24	285	4.96	1.87
25–34	615	4.78	1.81
35–44	632	4.73	1.79
45–54	555	4.96	1.97
55–64	605	4.90	1.97
65–74	619	4.47	1.71
75–85	356	4.40	1.74
Older than 85	64	4.77	1.94
Gender**			
Female	2165	4.71	1.87
Male	1540	4.76	1.83
Other	18	6.50	1.72
Indigenous status**			
Aboriginal and/or Torres Strait Islander	328	5.27	2.03
Not Aboriginal and/or Torres Strait Islander	3289	4.67	1.82
Place of birth			
Born in Australia	2848	4.76	1.9
Born outside of Australia	909	4.69	1.79
Number of people in household**			
Single person	915	5.26	1.93
Couple	759	4.14	1.51
At least two people	1336	4.63	1.81
<i>Note.</i> ** $p < 0.001$ for comparisons between demographic categories (independent sample t-tests and analysis of variance); <i>SD</i> = standard deviation.			

Variable	<i>n</i>	Loneliness score	
		<i>M</i>	<i>SD</i>
Household type**			
Single adult	915	5.26	1.93
Couple/partner	759	4.14	1.51
Single adult & children	509	5.06	1.92
Couple & children	675	4.21	1.58
Unrelated adults	152	5.11	2.00
Size of community (ARIA)**			
Major city	1555	4.75	1.80
Inner regional	1249	4.58	1.82
Outer regional	905	4.90	1.95
Living with mental health issues**			
Yes	1173	4.67	1.82
No	2012	4.08	1.47
Note. ** $p < 0.001$ for comparisons between demographic categories (independent sample t-tests and analysis of variance); <i>SD</i> = standard deviation.			

Analysis of loneliness scores by current engagement with support(s) are presented in Table 3. Difference of mean loneliness scores were identified across the different categories of current engagement with supports and support types, with those currently accessing both local community supports as well as accessing a mental health professional or service, and those only accessing a mental health professional or service reporting significantly higher loneliness scores than those only accessing local community supports or no supports ($p < .001$).

Table 3
Support Type by Loneliness Severity

Variable	<i>n</i>	Loneliness score	
		<i>M</i>	<i>SD</i>
Support type**			
Engaged with a local community support	263	4.69	1.82
Engaged with a mental health professional or service	622	5.44	1.90
Engaged with both local community supports and a mental health professional or service	306	5.95	1.92
No support utilisation	2385	4.41	1.71
Note. Recent access to support refers to the last three months; ** $p < 0.001$ for comparisons between groups.			

Regression models

The loneliness model initially considered demographic variables as predictors, including age, gender, place of birth, Indigenous status, number of people in household, and ARIA. Model 1 examined solely demographic variables and Models 2 to 6 examined the predicative value of all demographic variables and relevant variables (WHO-5, K10, K5, social cohesion and trust, and concern regarding social determinants). Model A (non-Aboriginal and/or Torres Strait Islander respondents only) and B (Aboriginal and/or Torres Strait Islander respondents only) accounted for demographic variables and all relevant variables factors together). See Table 4.

Table 4
Regression model output of demographic predictors of loneliness

Model	Loneliness score	
	β	95% confidence intervals
Model 1 – demographic variables		
Age category		
18–24		ref
25–34	-0.07	(-0.38, 0.25)
35–44	-0.05	(-0.36, 0.27)
45–54	0.08	(-0.25, 0.40)
55–64	-0.05	(-0.36, 0.26)
65–74	-0.31	(-0.62, - .001)*
75–84	-0.30	(-0.63, 0.04)
Over 85	-0.09	(-0.65, 0.48)
Gender		
Male		ref
Female	0.10	(-0.03, 0.24)
Other	1.84	(0.66, 3.01)*
Place of birth	-0.16	(-0.33, 0.01)
Indigenous status	0.27	(-0.01, 0.55)
Number of people in house	-0.31	(-0.39, -0.22)**
ARIA		
Major city		ref
Inner regional	-0.01	(-0.39, 0.38)
Outer regional	-0.05	(-0.48, 0.37)
Model 2 – demographic variables and WHO-5		
WHO-5	-0.13	(-0.13, -0.01)**
Note. ref = reference variable; ** $p < 0.001$; *$p < 0.05$; demographic variables were included in all models presented. ^a Non-Aboriginal and/or Torres Strait Islander respondents only. ^b Aboriginal and/or Torres Strait Islander respondents only.		

Model	Loneliness score	
	β	95% confidence intervals
Model 3 - demographic variables and K10 ^a		
K10	0.15	(0.13, 0.16)**
Model 4 - demographic variables and K5 ^b		
K5	0.23	(0.16, 0.29)**
Model 5 - demographic variables and social cohesion and trust		
Social cohesion and trust	-0.09	(-0.11, -0.06)**
Model 6 – demographic variables and concern about social determinants		
Concern about social determinants	0.83	(.57, 1.08)**
Final model A ^a – demographic variables, WHO-5, K10, social cohesion and trust and concern about social determinants		
WHO-5	0.01	(-0.04, 0.04)
K-10	0.12	(0.10, 0.15)
Social cohesion and trust	-0.06	(-0.11,-0.01)*
Concern about social determinants	0.01	(.28, .29)
Final model B ^b – demographic variables, WHO-5, K5, social cohesion and trust and concern about social determinants		
WHO-5	-0.19	(-0.31, -0.06)**
K-5	0.05	(-0.10, 0.20)
Social cohesion and trust	-0.13	(-0.27,0.01)
Concern about social determinants	0.35	(-.25, .95)
<i>Note.</i> ref = reference variable; ** $p < 0.001$; * $p < 0.05$; demographic variables were included in all models presented. ^a Non-Aboriginal and/or Torres Strait Islander respondents only. ^b Aboriginal and/or Torres Strait Islander respondents only.		

Demographics

When demographics were placed in one model (Model 1), the number of people within the household was the most significant predictor of loneliness. As number of people in household increased, loneliness decreased. Other significant demographic predictors of loneliness were age category 65–74 years and gender defined as ‘Other’. Additionally, people who live in outer regional areas reported significantly higher loneliness than people who lived in major cities and inner regional areas ($p < 0.001$).

Psychological distress and wellbeing

Model 2 found WHO-5 score to be a significant predictor of loneliness. As mental wellbeing increased, loneliness significantly decreased. Models 3 and 4 identified psychological distress (K5 and K10 measures) as significant predictors of loneliness. K5 measures psychological distress of Aboriginal and/or Torres Strait Islander respondents, whereas the K10 measures psychological distress of participants who did not report being Aboriginal and/or Torres Strait Islander. In both samples, as psychological distress increased, loneliness significantly increased. Social cohesion and trust (Model 5) was also a significant predictor of loneliness. As social cohesion and trust increased, loneliness significantly decreased. Similarly, concerns regarding the social determinants of mental health was a significant predictor, where increased concerns resulted in an increase in loneliness (Model 6). All relationships were statistically significant and in the expected direction. In final Model A (Non-Aboriginal and/or Torres Strait Islander respondents), social cohesion and trust was the largest predictor of loneliness when all variables put in model. As social cohesion and trust decrease, loneliness significantly increases.

In final Model B (Aboriginal and/or Torres Strait Islander respondents), subjective wellbeing was the largest predictor of loneliness after accounting for demographics and other relevant factors. As subjective wellbeing decreases, loneliness significantly increases.

Discussion

This study focused on identifying factors that influence loneliness severity within Australian communities. The number of people living in a house was identified as a critical factor influencing loneliness, with single-person households experiencing the greatest loneliness. This is important in the context of increasing trends of people living alone where in Australia, at least 24% of households are lone households (26). The type of relationships that make up a household also influence loneliness, with couples experiencing less loneliness than non-couples.

In terms of gender diversity, non-binary respondents are also more vulnerable to higher levels of loneliness, though this should be interpreted with caution given the small sample size. Those who were 65–74 years old also reported significantly increased loneliness, which is consistent with research on loneliness in older adults (27, 28).

In this study, those who identified as Aboriginal and/or Torres Strait Islander reported significantly more loneliness than non-Aboriginal and/or Torres Strait Islander individuals. While this is the first known study to report this finding it should be taken with caution because of the loneliness measure used. Specifically, the UCLA-LS-3 was developed for Eurocentric societies (16) and while it has been psychometrically validated in different cultures (29), there is no known psychometric validation of the loneliness measure in Australian Indigenous communities. Without psychometric validation, there is a

risk that existing measures of loneliness may reflect dominant cultural assumptions and fail to capture how loneliness is understood, experienced, or expressed by Indigenous peoples.

In further examination of Aboriginal and/or Torres Strait Islander respondents, lower subjective wellbeing was the most important factor of those examined. This is in contrast with the non-Aboriginal and/or Torres Strait Islander sample where lower social cohesion and trust was associated with more loneliness.

The findings suggest that loneliness is influenced by social cohesion and trust, culture, location, and access to resources. Hence social and structural issues play an important role in understanding people's experience of loneliness and how it can be addressed. Considering the established links between loneliness and mental health, and inequality and distress, these findings support international efforts to acknowledge the importance of addressing the social determinants of mental health in any practice and policy response to loneliness (30).

Those accessing services were more likely to be lonely – which suggests that people who are lonely are seeking more services to help them manage, potentially leading to more service utilisation. Future research can explore the economic cost of loneliness due to increased service utilisation, and how supports may better respond to the needs of people experiencing loneliness. Mental health services then have a unique opportunity to respond to loneliness, but in doing so, may require new approaches to care. The inclusion of peer support workers into both clinical and community based mental health services could better address the loneliness of people seeking support for their mental health (31), offering a fundamentally different approach, grounded in shared experience, relationality, and mutuality where connection is centred over diagnosis and intervention (32).

A major study strength was the use of in-person surveys via a door-knocking methodology that allowed an opportunity to connect with a large sample and gather information from people outside of clinical service settings. People Connectors were able to initiate conversations about wellbeing and enable people to share their experiences.

Limitations

People Connectors had significant influence over where to focus doorknocking efforts in their communities. While this community-led approach likely enhanced the relevance and reach of the survey (including engaging with diverse participants), it may have also introduced selection bias based on local knowledge, relationships, or perceived need. These data were not intended to be representative of the Australian population.

Conclusion

Overall, structural and societal influences and macro forces shape the conditions under which loneliness is experienced, influencing how and with whom people are able to connect, and the quality of those

connections. This research highlights the importance of moving beyond individual-level explanations to consider how loneliness varies across communities and social groups, shaped by much broader sociocultural and political contexts.

Declarations

Declarations of conflicting interest: Michelle Lim is the scientific chair and CEO of Ending Loneliness Together and on the International Scientific Board, Global Initiative on Loneliness and Connection, and a member of the Technical Advisory Group, World Health Organization Commission to Social Connection. Lisa Brophy is a member of the scientific board at Ending Loneliness Together and was a member of the Assisting Communities through Direct Connection (ACDC) Project Steering Committee. Lisette Kaleveld, Yasmine Hooper and Leanne Lester are members of the Centre for Social Impact University of Western Australia (UWA) who were the primary data collectors of ACDC Project data.

Funding statement:

The project was funded by the Community Mental Health Australia (CMHA) via an Expressions of Interest (EOIs) for researchers to undertake complementary analysis and/or research in relation to the outcomes of the Assisting Communities through Direct Connection (ACDC) Project.

Ethics approval: Evaluation and research components of the ACDC Project received ethics approval from the Human Research Ethics Committee at the University of Western Australia (2020/ET000171).

Data availability statement: Data is available if requested

Author Contribution

MHLIM and LB led the conceptualisation of the manuscript. YH, LL, LK were all involved in data collection and analyses. AB provided advice on data analyses and interpretation. All authors reviewed the drafts and contributed to the writing of the manuscript.

Acknowledgement

Acknowledgement TJ Spencer for research assistance.

Data Availability

All data supporting the findings of this study are available from the authors.

References

1. Lim MH, Manera KE, Owen KB, Phongsavan P, Smith BJ. The prevalence of chronic and episodic loneliness and social isolation from a longitudinal survey. *Sci Rep.* 2023;13:12453.
2. Badcock JC, Holt-Lunstad J, Garcia E, Bombaci P, Lim MH. Position statement: Addressing social isolation and loneliness and the power of human connection. Global Initiative on Loneliness and Connection (GILC); 2022.
https://www.gilc.global/_files/ugd/410bdf_62e236db3a7146cd9f2654877a87dbc6.pdf
3. Holt-Lunstad J, National Health Guidelines for Social Connection. What Is the evidence in support and what might the guidelines say? *Policy insights Behav Brain Sci.* 2023;10(1):41–50.
4. Masi CM, Chen HY, Hawkley LC, Cacioppo JT. A meta-analysis of interventions to reduce loneliness. *Pers Soc Psychol Rev.* 2011;15(3):219–66.
5. Lim MH, Eres R, Vasan S. Understanding loneliness in the twenty-first century: an update on correlates, risk factors, and potential solutions. *Soc Psychiatr Psychiatric Epid.* 2020;55:793–810.
6. Kirkbride JB, Anglin DM, Colman I, Dykxhoorn J, Jones PB, Patalay P, et al. The social determinants of mental health and disorder: evidence, prevention and recommendations. *World Psychiatr.* 2024;23(1):58–90.
7. Manera KE, Smith BJ, Owen KB, Phongsavan P, Lim MH. Psychometric assessment of scales for measuring loneliness and social isolation: an analysis of the household, income and labour dynamics in Australia (HILDA) survey. *Health Qual Life Out.* 2022;20(1):40.
8. Menec VH, Newall NE, Mackenzie CS, Shooshtari S, Nowicki S. Examining social isolation and loneliness in combination in relation to social support and psychological distress using Canadian Longitudinal Study of Aging (CLSA) data. *PLoS ONE.* 2020;15(3):e0230673.
9. Lim MH, Rodebaugh TL, Zyphur MJ, Gleeson JF. Loneliness over time: The crucial role of social anxiety. *J Abnorm Psychol.* 2016;12(5):620–30.
10. Meltzer H, Bebbington P, Dennis MS, Jenkins R, McManus S, Brugha TS. Feelings of loneliness among adults with mental disorder. *Soc Psychiatr Psychiatric Epid.* 2013;48(1):5–13.
11. Coll-Planas L, Del Valle Gómez G, Bonilla P, Masat T. Promoting social capital to alleviate loneliness and improve health among older people in Spain. *Health Soc Care Comm.* 2017;25(1):145–57.
12. Nyqvist F, Victor CR, Forsman AK, Cattán M. The association between social capital and loneliness in different age groups: a population-based study in Western Finland. *BMC Public Health.* 2016;16(542).
13. Baron-Epel O, Elran-Barak R, Donchin M. Social capital as a mediator and moderator in the association between loneliness and health, Israel as a case study. *Int J Environ Res Pub Health.* 2022;19(6):3698.
14. Pan H, Qualter P, Barreto M, Stegen H, Dury S. Loneliness in older migrants: Exploring the role of cultural differences in their loneliness experience. *Int J Environ Res Pub Health.* 2023;20(4):2785.
15. Lim M, Qualter P, Ding D, Holt-Lunstad J, Mikton C, Smith B. Advancing loneliness and social isolation as global health challenges: taking three priority actions. *Pub Health Res Prac.* 2023;33(3):3332320.

16. Hughes ME, Waite LJ, Hawkley LC, Cacioppo JT. A Short Scale for Measuring Loneliness in Large Surveys: Results From Two Population-Based Studies. *Res Aging*. 2004;26(6):655–72.
17. Russell D, Peplau LA, Cutrona CE. The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *J Pers Soc Psychol*. 1980;39(3):472–80.
18. Australian Bureau of Statistics. Information Paper: Use of the Kessler Psychological Distress Scale in ABS Health Surveys, Australia 2007-08. 2012 [Available from: <https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4817.0.55.001Chapter92007-08>]
19. Kessler RC, Barker PR, Colpe LJ, et al. Screening for serious mental illness in the general population. *Arch Gen Psychiatr*. 2003;60(2):184–9.
20. Australian Bureau of Statistics. Australian Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2012-13. 2013 [Available from: <https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4727.0.55.002Chapter3602012-13>]
21. Australian Institute of Health and Welfare. Measuring the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples. In: Australian Institute of Health and Welfare; 2009. p. 115.
22. World Health Organization. Wellbeing measures in primary health care/the DepCare Project: report on a WHO meeting: Stockholm, Sweden, 12–13 February 1998. Regional Office for Europe: World Health Organisation; 1998.
23. Topp C, Østergaard SD, Søndergaard S, et al. The WHO-5 Well-Being Index: a systematic review of the literature. *Psychother Psychosom*. 2015;84(3):167–76.
24. Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: A multilevel study of collective efficacy. *Sci*. 1997;277(5328):918–24.
25. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct Equ Model*. 1999;6(1):1–55.
26. De Vaus D, aQL. Demographics of living alone. Australian Institute of Family Studies; 2015.
27. Harrington KD, Vasan S, Kang JE, Sliwinski MJ, Lim MH. Loneliness and cognitive function in older adults without dementia: A systematic review and meta-analysis. *J Alz Dis*. 2023;91(4):1243–59.
28. Ogrin R, Cyarto EV, Harrington KD, Haslam C, Lim MH, Golenko X, et al. Loneliness in older age: What is it, why is it happening and what should we do about it in Australia? *Aus J Age*. 2021;40(2):202–7.
29. Alsubheen SA, Oliveira A, Habash R, Goldstein R, Brooks D. Systematic review of psychometric properties and cross-cultural adaptation of the University of California and Los Angeles loneliness scale in adults. *Cur Psychol*. 2023;42(14):11819–33.
30. World Health Organization. Guidance on mental health policy and strategic action plans: Module 1. Introduction, purpose and use of the guidance. Geneva: World Health Organization; 2025.
31. Bravata DM, Kim J, Russell DW, Goldman R, Pace E. Digitally enabled peer support intervention to address loneliness and mental Health: Prosp Cohort Anal. *JMIR Res*. 2023;7:e48864.

32. Barreto M, van Breen J, Victor C, et al. Exploring the nature and variation of the stigma associated with loneliness. *J Soc Per Relat.* 2022;39(9):2658–79.

Footnotes

1. No rural sites were included in the ACDC Project at this time.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [ACDCAppendix.docx](#)