Received: 31 January 2022 | Revised: 6 June 2022 | Accepted: 13 August 2022
DOI: 10.1111/hsc.13987

Health and Social Care in the community
WILEY

ORIGINAL ARTICLE

Social connectedness of carers: An Australian national survey of carers

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Funding information
NSW Department of Communities and Justice

Abstract

Carers of people living with a disability, mental health problems, alcohol or drug dependency, chronic condition, terminal illness or who are frail due to age may experience negative caregiving impacts. Although carers' social isolation has been reported in many qualitative studies, it has largely been neglected in quantitative studies. Using data collected in the Carers NSW 2020 National Carer Survey, this large-scale quantitative study aimed to identify the extent of Australian carers' social connectedness and what factors may be related to their social well-being. The validated Friendship Scale was used to measure social connectedness of 5585 carers. More than half (56.2%) of these carers were socially isolated. Analysis found that a longer duration of caring, more time spent weekly caring, living with the care recipient, caring for a greater number of people, receiving no help from others, higher reported psychological distress and reporting perceived needs were all associated with greater social isolation. Identifying as female or nonbinary/gender diverse, identifying with a culturally and linguistically diverse background, and caring as a parent, former partner or young carer were also related to poorer social connectedness. Health and social services need to consider the needs of carers, identify carers who are socially isolated and provide resources to promote social connectedness. Greater attention in practice and research to focus on carers' social connectedness to address this crucial caregiving experience is required.

KEYWORDS
ageing, Australia, carer, disability, family, mental health, social isolation

1 | INTRODUCTION

People living with health conditions, disability or who are ageing often require substantial support from their informal networks to participate successfully in the community. Family members and close friends often take up this caring responsibility and perform numerous tasks to support the person with care needs (Diminic et al., 2018; Pirkis et al., 2010). According to the Australian Bureau of Statistics (2019), a carer is defined as a person who provides any informal assistance to people with disability or older people aged 65 years and over. In Australia, 2.65 million people (10.8% of the population) provide care (Australian Bureau of Statistics, 2019).

Most carers are female and the largest group (19.7%) of carers are between 55 to 64 years old (Australian Bureau of Statistics, 2019). Only around 7.0% of carers are below 25 years old (Australian Bureau of Statistics, 2019). These informal carers play a significant role in providing mobility, self-care and communication support to individuals with disability or health conditions or older people (Australian Bureau of Statistics, 2019).

However, studies consistently show that informal carers experience negative caregiving impacts such as psychological distress, poor quality of life, social isolation and physical health problems (Luckett et al., 2019; Poon et al., 2017). Numerous studies also reported that carers need support like respite care, financial assistance and information on treatment and resources (Diminic et al., 2018; Pirkis et al., 2010). Due to the long duration and severity of some health conditions and disabilities, carers who experience a lack of support from services and their social networks can inevitably develop fatigue and caregiving burden over time. Social isolation in particular is commonly reported by carers (Grossman & Webb, 2016; Keating & Eales, 2017). One study showed that more than a quarter of carers of people with psychotic disorders experienced social isolation (Poon et al., 2017). Carers may lose important social support or withdraw from others in order to cope with the demands of caring (Keating & Eales, 2017). Relatives and friends may also distance themselves from carers due to a lack of relational reciprocity and the long-term nature of caring duties (Keating & Eales, 2017). The stigma associated with health conditions and disabilities in some communities may further influence carers to withdraw from social interactions and activities (Broady et al., 2017).

There are several terms in the literature with different definitions to describe the concept of social relationships. For example, social isolation refers to an objective counting of social contacts, interactions and network sizes, while loneliness is a subjective perception of desired and actual social relationships, and the experience of being lonely (Barnes et al., 2021; Holt-Lunstad et al., 2015). Social connection is a multifactorial construct that encompasses structural (such as social networks and size), functional (such as social support and perceived loneliness), and qualitative aspects of social relationships (Holt-Lunstad et al., 2017). The umbrella term, social connection has a bi-directional relationship with social isolation and loneliness (Barnes et al., 2021; Holt-Lunstad et al., 2017). Social connection enhances well-being and quality of life, and provides significant emotional and practical support to carers (Cross et al., 2018; Keating & Eales, 2017).

Despite social isolation in carers being commonly reported in qualitative studies, this research area has been neglected in quantitative research (Schulz et al., 2020). Carers' social connectedness has been largely missing in large-scale or national surveys in Australia. Most large-scale surveys focused on carers' psychological well-being, barriers to healthcare and their need for support services (Pirkis et al., 2010; Temple & Dow, 2018; Temple et al., 2021). Specifically, the Australian Survey of Disability, Ageing and Carers studied carers' social and community participation, rather than social isolation (Australian Bureau of Statistics, 2019). These issues have resulted in a significant knowledge gap concerning carers' social connectedness and the percentage of Australian carers who may be feeling socially isolated. In addition, studies that explore social connection have generally focused on carers of people with specific conditions such as psychotic disorders (Poon et al., 2017), or certain geographical contexts like rural areas (Hussain et al., 2018). These specific studies often have moderate sample sizes (Hussain et al., 2018; Poon et al., 2017) which limit current understanding of the extent of social isolation in carers.

What is known about this topic

- Carers may experience negative caregiving impacts including social isolation.
- Most studies reporting carers' social isolation are qualitative or moderate sample quantitative studies resulting in inconclusive findings.

What this paper adds

- More than half of carers reported experiencing social isolation.
- Carers with high unmet needs and demanding caregiving responsibilities are more likely to be socially isolated.
- Services should give greater attention to addressing the social connectedness of young, culturally and linguistically diverse, nonbinary/gender diverse, parent and former partner carers.

From the limited studies that exist, the literature seems to indicate that some factors are related to greater social isolation in carers. Living with the care recipient, for example, was related to greater social isolation in carers (Grossman & Webb, 2016). A qualitative study suggested caring responsibilities led to loneliness in male carers (Willis et al., 2020). Carers' social isolation was closely related to their poor psychological health as reported in several studies (Grossman & Webb, 2016; Poon et al., 2017). Factors that may increase greater caring demands may also influence carers to reduce their social activities (Keating & Eales, 2017). For example, a longer time spent caring for someone, more hours per week spent caring, a greater number of care recipients requiring carers' attention, and a greater perception of unmet needs may influence carers to limit their social activities so that they can maintain their caring responsibilities. In addition, certain socio-demographic characteristics, such as having a culturally and linguistically diverse background or identifying as nonbinary/gender diverse, may be related to greater social isolation (Hughes, 2016; Poon et al., 2015). However, findings from large-scale caregiving studies have neglected to explore social connectedness comprehensively.

This study aimed to address the gap concerning carers' social connectedness using a large national sample of carers from Australia. Based on existing knowledge on social connection, this study will test four exploratory hypotheses.

Hypothesis 1 *Greater social isolation was related to socio-demographic factors of carers, specifically: carers being older, identifying as nonbinary/gender diverse or male or having a cultural identity than Australian. This hypothesis is derived from studies that being older, identifying as nonbinary/gender diverse or male or having a cultural identity than Australian may relate to greater social isolation (Hughes, 2016; Poon et al., 2015; Willis et al., 2020).*

Hypothesis 2 *Greater social isolation was related to caregiving relationships, specifically: caring for more people, living with the care recipient, receiving no help from others, having a longer term caring role and caring for children. This hypothesis is derived from a review that more caregiving demands are likely related to greater social isolation (Keating & Eales, 2017).*

Hypothesis 3 *Greater social isolation was related to service utilisation, specifically: receiving less support, having more unmet needs and receiving services for children and young people. This hypothesis is derived from studies showing that poor service utilisation may be related to greater social isolation (Hussain et al., 2018).*

Hypothesis 4 *Greater social isolation was related to greater psychological distress. This hypothesis is derived from studies reporting high psychological distress in carers (Grossman & Webb, 2016; Poon et al., 2017).*

2 | MATERIALS AND METHODS

The data were collected in the Carers NSW 2020 National Carer Survey. An expert reference committee consisting of researchers, representatives of state and territory Carer Associations and carer representatives provided input to the planning, development of the survey questionnaire and data collection strategy. The study was approved by Macquarie University Faculty of Arts Human Research Ethics Committee (reference number: 52020623314360).

2.1 | Data collection

A convenience sampling approach was used to recruit a large sample of carers from all Australian states and territories. Carers who had their contact details recorded in member, client and subscriber databases of the state and territory Carer Associations were invited to participate in the survey. The survey was also advertised on social media. In addition, the survey was promoted through university networks of the expert reference committee. Based on self-identification by participants, they must be above 16 years old, living in Australia, and providing care to a friend, family member or neighbour with health, ageing or disability conditions in order to be eligible to participate in the survey. Carers were provided a copy of the Participant Information and Consent Form before completing the survey. Carers who were willing to participate were provided with a physical copy of the questionnaire or an online version via Survey Monkey. Consent was considered obtained when carers participated in the survey. The full description of the data collection process can be found at www.carersnsw.org.au/research/survey.

2.2 | Measures

The 2020 survey questionnaire was built on previous established surveys conducted by Carers NSW. It was revised with input from the expert reference committee to ensure that the questionnaire was relevant for current Australian context and could provide reasonable research value. The finalised questionnaire was structured into six sections: (1) Caring relationship, (2) Caring role, (3) Services and support, (4) Paid work, (5) Health and well-being, and (6) About you (the participant). It included three validated scales, namely the Friendship Scale (FS; Hawthorne, 2006), Kessler-5 (K5; Kessler et al., 2003) and Personal Wellbeing Index (Cummins et al., 2003). The full questionnaire can be obtained from www.carersnsw.org.au/research/survey.

To assess social connectedness, the FS was used (Hawthorne, 2006). The scale was developed by a comprehensive search of the literature covering seven domains of social isolation (Hawthorne, 2006). The study selected the six-item FS as it has shown reasonable validity, brevity for large-scale surveys and the multidimensional construct of social isolation (Dronavalli & Thompson, 2015; Hawthorne et al., 2013). In addition, Australian population normative figures are available for comparison with carers' FS scores (Hawthorne, 2008). Each question asks participants to score their perceived social connection on a 5-point Likert scale. For example, "during the past four weeks, it has been easy to relate to others (0 = not at all, 4 = almost always)". Higher scores indicate greater social connectedness while lower scores indicate social isolation.

The K5 was used to examine psychological distress. The K5 scale is an adaptation of the well-known Kessler-10 scale (Kessler et al., 2003), developed as a brief version of the tool and more culturally appropriate for Aboriginal and Torres Strait Islander peoples (Australian Institute of Health and Welfare, 2009; Brinckley et al., 2021). The K5 requires participants to score their perceived psychological well-being on a 5-point Likert scale. For example, "in the past four week, about how often did you feel nervous (1 = none of the time, 5 = all of the time)." Higher K5 scores indicate greater psychological distress.

2.3 | Data analysis

The data were cleaned and analysed using SPSS 26 (IBM Corp, 2019). Due to the online survey logic and nature of a physical questionnaire in a large-scale survey, participants were allowed to skip any question without providing a reason. Out of 7735 valid responses in the dataset, this study used 5585 cases with available FS scores for analysis.

Descriptive statistics were first conducted to identify the distribution of socio-demographic and caregiving characteristics. According to participants' responses on their own cultural identity, cultural backgrounds for analysis were categorised as Australian, First Nations Australian and other (Aboriginal and/or Torres Strait Islander and another cultural group), Australian and other (more than one cultural group including Australian) and Other (another cultural background than Australian). As FS scores followed a normal-like distribution, Pearson's correlation (*r*) was used to identify relationships between the continuous variables. Mean difference in FS scores between groups were analysed using independent samples *t*-test or one-way ANOVA with post hoc LSD corrections. Multiple linear regression analyses were conducted for variables with statistically significant relationships with FS scores. Categorical variables (living apart, no help from others and no perceived needs) were coded as dummy values in the regression models. *p*-value was accepted at 0.05 (two-tailed) for all statistical tests.

3 | RESULTS

3.1 | Socio-demographic characteristics of carers and care recipients

There were more female than male carers (Table 1). Most carers had certificate/diploma or university degree as their highest level of education. Most participants identified their cultural background as Australian.

3.2 | Social connectedness and socio-demographic characteristics

More than half (56.2%) of carers were experiencing social isolation (Table 2). Age of carers was positively correlated to FS scores ($r = 0.26$, $p < 0.001$, $n = 5456$) indicating that ageing was related to greater social connectedness. To investigate this further, participants were grouped according to age: young carers (up to 25 years old, $n = 102$), working age carers (25 to 64 years old, $n = 3432$) and older carers (65 years old and above, $n = 1923$). Older carers were found to be the most socially connected, followed by working age carers. Young carers were the least socially connected (Table 3).

Male carers were statistically significantly more socially connected than female and nonbinary/gender diverse carers (Table 3). Carers who identified their own cultural background as “First Nations Australian and other” were more statistically significantly isolated than carers who identified themselves as “Australian” or “Other”. Those who identified as “Australian” were more socially connected than carers who identified themselves as “Australian and other”. The results support Hypothesis 1 that social isolation was related to identifying as nonbinary/gender diverse or having a cultural identity other than Australian. However, younger and female carers were found to be more socially isolated than older carers.

3.3 | Social connectedness and caregiving relationships

Out of 5141 carers, most carers provided care to one or two people (average = 1.4, SD = 0.70). The number of people cared for was negatively correlated to FS scores ($r = -0.14$, $p < 0.001$, $n = 5141$) indicating that a higher number of people cared for by each carer was related to greater social isolation. Most ($n = 4066$, 79.5% out of 5112) carers were living with care recipients. FS scores of those not living together were statistically significantly higher than those living with the care recipient (Table 4). Close to half ($n = 2548$, 49.9% out of 5103) of carers received no help from others. FS scores of those who received help was statistically significantly higher than the FS scores of those who received no help (Table 4).

Carers spent an average of 72.84 (SD = 59.73) hours per week caring. The time spent caring was negatively correlated with FS scores ($r = -0.18$, $p < 0.001$, $n = 4899$) indicating that more time spent caring was related to greater social isolation. Most carers ($n = 4894$, 96.6% out of 5066) provided care for more than 1 year. The average duration of the caring role was 13.46 (SD = 10.58) years. The years spent caring were negatively correlated with FS scores ($r = -0.03$, $p = 0.03$, $n = 4892$) indicating that longer time spent caring in years was related to greater social isolation.

There were more carers of children (including adult children) and carers of their spouse/partner than other caring relationships (Table 1). Carers who were caring for their children or former partners had statistically significantly poorer social connectedness than other caring relationships (Table 3). The results support Hypothesis 2, that social isolation was related to caring for more people, living with the care recipient, receiving no help from others, having a longer duration of care or caring for children. In addition, caring for former partners was found to be related to greater social isolation.

3.4 | Social connectedness and service utilisation

Carers not only reported using multiple services but also felt that they needed more support (Table 5). The most commonly used support was online groups (15.3%) and the highest perceived need was for planned respite (28.9%). FS scores were neither statistically correlated with having at least one type of support ($p = 0.487$) nor more support services received ($p = 0.678$). However, a greater number of needs ($r = -0.30$, $p < 0.001$, $n = 5585$) was correlated with lower social connectedness. There was a statistically significant difference in FS scores for carers with at least one perceived need (mean = 12.89, SD = 5.43) and carers with no perceived need (mean = 15.69, SD = 5.43; $t[5583] = 19.235$, $p < 0.001$), indicating greater social isolation in carers with perceived needs.

TABLE 1 Socio-demographic characteristics of carers and care recipients

	Carers		Care recipients	
	Mean (SD)	***N* (%)**	**Mean (SD)**	***N* (%)**
Age[a]	58.02 (14.22)		50.53 (28.70)	
Gender[a]				
Female		4506 (82.0)		2298 (44.9)
Male		954 (17.4)		2786 (54.5)
Non-binary/gender diverse		15 (0.3)		22 (0.4)
Prefer not to say		18 (0.3)		8 (0.2)
Education[a]				
Less than high school		930 (17.0)		n/a
High school		747 (13.7)		
Certificate/diploma		1959 (35.9)		
Bachelor or higher		1826 (33.4)		
Cultural backgrounds[a]				
Australian		4175 (78.1)		4153 (81.6)
Australian and other		257 (4.8)		82 (1.6)
First Nations Australian and other		56 (1.0)		
Other		860 (16.1)		856 (16.8)
Conditions[b]				
Physical disability		n/a		1810 (32.4)
Chronic health				1408 (25.2)
Mental health problem				1226 (22.0)
Autism spectrum disorders				1136 (20.3)
Intellectual disability				1116 (20.0)
Frailty due to ageing				1108 (19.8)
Sensory impairment				904 (16.2)
Dementia				783 (14.0)
Neurological conditions				735 (13.2)
Acquired brain injury/stroke				468 (8.4)
Terminal illness				266 (4.8)
Drug/alcohol				172 (3.1)
Others				701 (12.6)
Residence status[a]				
Living together with care recipients		4066 (79.5)		n/a
Living apart from care recipients		1046 (20.5)		
Relationship[a]				
Child of carer				2106 (41.1)
Partner/spouse of carer				1636 (32.0)
Parent of carer				943 (18.4)
Sibling of carer				177 (3.5)
Friend of carer				114 (2.2)
Grandchild of carer				44 (0.9)
Former partner				18 (0.4)
Grandparent of carer				15 (0.3)
Neighbour of carer				10 (0.2)
Other				57 (1.1)

[a] After removing missing value cases of carers, Age: $n = 5456$, Gender: $n = 5493$, Education: $n = 5462$, Cultural background: $n = 5348$, & Residence status: $n = 5112$. After removing missing value cases of care recipients, Age: $n = 5071$, Gender: $n = 5114$, Cultural backgrounds: $n = 5091$, and Relationship: $n = 5120$.

[b] Conditions: $N = 5585$; percentages do not add to 100% due to the possibility of multiple conditions in each care recipient.

TABLE 2 Social connectedness as measured by Friendship Scale

	Carers NSW (*N* = 5585)		Australian population norm (Hawthorne, 2008; *N* = 3015)
	n	%	%
Very isolated	1744	31.2	2
Isolated	1394	25.0	5
Some isolation	1008	18.0	9
Connected	889	15.9	25
Very connected	550	9.8	59

Ages of care recipients were found to be statistically corelated with FS scores ($r = 0.25$, $p < 0.001$, $n = 5071$), indicating that caring for older people was related to greater social connectedness. To further investigate Hypothesis 3, whether service provision to different age groups has any relationship with carers' social connectedness, the ages of care recipients were grouped as: children and young people (below 20 years old, $n = 1186$), working age (between 20 to 64 years old, $n = 1762$) and older (above 65 years old, $n = 2123$). Caring for a child or young person presented with the lowest FS scores, indicating that these carers were the most isolated (Table 3). The results support Hypothesis 3 that social isolation was related to having more unmet needs, or receiving services for children and young people. However, receiving less support was not found to be related to social isolation.

3.5 | Social connectedness and psychological distress

Almost half (45.1% out of 5385) of carers had high/very high psychological distress as measured by K5. FS scores were negatively correlated with K5 scores ($r = -0.63$, $p < 0.001$, $n = 5385$) indicating that greater psychological distress was related to greater social isolation. This result supports Hypothesis 4, that social isolation was related to greater psychological distress.

3.6 | Predictors of social connectedness

Using multiple linear regression, carers' ages and hours per week spent caring were first added to the model (Model 1). Time spent caring in years was not added as it did not derive an acceptable *p*-value. Residence status (Model 2), number of people cared for (Model 3), having perceived support needs (Model 4), receiving help from others (Model 5) and K5 scores (Model 6) were found to have an effect in predicting friendship scores. All total predictive effects (R^2) were modest, with K5 having the strongest effect (Table 6). Summarising the results, more time spent weekly caring, living with the care recipient, caring for more people, receiving no help from others, higher psychological distress and having perceived support needs were predicted to influence greater social isolation.

4 | DISCUSSION

This large-scale study has provided crucial knowledge regarding carers' extent of social connectedness. The study also identified relationships between levels of social isolation and many important factors. Due to the wide recruitment strategy, the study had recruited a large sample of carers, including many who were not receiving carer services across Australia. The mean age of all carers and higher percentage of females in our sample reflect the results of the latest Australian national survey regarding carers (Australian Bureau of Statistics, 2019). The caring relationships and residence status of the care recipients also reflect Australian population norm (Australian Bureau of Statistics, 2019). Compared with the Australian population norm of 7% of people being socially isolated (Hawthorne, 2008), more than half of carers were socially isolated. Such a large percentage of carers experiencing social isolation is alarming. This study has indicated that many carers are likely experiencing social isolation adding to the knowledge gained from qualitative and smaller sample quantitative studies (Schulz et al., 2020). Given that many studies focused on carers' psychological distress with similar results (Temple & Dow, 2018; Temple et al., 2021), this study shows that researchers and practitioners should give greater attention to carers' perception of social isolation.

Specifically, this study found that some cohorts of carers were more socially isolated than others according to the four hypotheses. First, young carers generally had lower social connection with others than older carers. This was novel as most carer studies recruited carers from support groups or services, often resulting in the reporting of the well-being of older carers, and neglecting the challenges of young carers who are often hidden from formal services (Woods & McCormick, 2018). Developing meaningful social relationships is part of the developmental process of young people. However, young carers may forfeit their social connections so that they can manage the demands of schooling, working and caring responsibilities (Addo et al., 2021).

Regarding gender differences, nonbinary/gender diverse carers had lower social connectedness than other carers. People who are nonbinary/gender diverse are known to have smaller social networks as a result of discrimination (Hughes, 2016) and may not feel they "fit in" with carer support groups (Gibson, 2018). In addition, these carers represent a small percentage of all carers, which may create further barriers to finding support. They may also face discrimination from service providers due to their gender identity (Gibson, 2018).

The male/female difference in social connectedness is surprising. In one Australian study, loneliness was found to be more common in males than females (Baker, 2012), and women had higher community participation and social cohesion than men (Berry & Welsh, 2010). Given that most carers are female in this study, their lower social connectedness may be associated with the higher prevalence of high-intensity caring roles among female carers. However, the possibility of high-intensity role of female carers was not clear in this study as 48.4% of females were primary carers, while 58.1% of males were primary carers. Another possible explanation is that the

TABLE 3 Mean Friendship Scale scores of different groups using one-way ANOVA post hoc test LSD

	Mean (SD)	95% CI	*F* ratio	*df*	*p*-value
Age[a]					
Up to 25 (young)	12.08 (5.19)	11.06, 13.10	121.18	2	<0.001
26 to 64 (adults)	13.40 (5.74)	13.20, 13.59			
65 and above (older)	15.75 (5.03)	15.53, 15.98			
Gender[b]					
Female	14.00 (5.62)	13.83, 14.16	11.83	3	<0.001
Male	15.14 (5.44)	14.79, 15.48			
Nonbinary/gender diverse	11.87 (6.03)	8.53, 15.21			
Prefer not to say	13.72 (6.16)	10.66, 16.79			
Cultural groups[c]					
Australian	14.30 (5.61)	14.13, 14.47	4.18	3	0.006
First Nations Australian and other	12.23 (5.87)	10.66, 13.81			
Australian and other	13.50 (5.66)	12.80, 14.19			
Other	14.11 (5.50)	13.74, 14.48			
Relationship[d]					
Parent of carer	15.00 (5.64)	14.64, 15.36	18.20	9	<0.001
Partner/spouse of carer	14.87 (5.15)	14.62, 15.12			
Child of carer	12.92 (5.65)	12.68, 13.17			
Sibling of carer	14.71 (5.80)	13.85, 15.57			
Grandparent of carer	14.53 (5.99)	11.22, 17.85			
Friend of carer	14.93 (5.74)	13.87, 15.99			
Neighbour of carer	12.40 (5.70)	8.32, 16.48			
Grandchild of carer	13.77 (6.21)	11.88, 15.66			
Former partner	11.28 (7.54)	7.53, 15.03			
Other	14.82 (5.63)	13.33, 16.32			
Age of care recipients for service utilisation[e]					
Children and youth	12.12 (5.69)	11.79, 12.44	144.03	2	<0.001
Adults	13.71 (5.54)	13.45, 13.97			
Older adults	15.41 (5.24)	15.19, 15.63			

[a] Older adults versus adults: mean difference = 2.36 (95% CI: 2.05, 2.66); $p < 0.001$. Older adults versus young people: mean difference = 3.67 (95% CI: 2.58, 4.77); $p < 0.001$. Adults versus young people: mean difference = 1.32 (95% CI: 0.24, 2.40); $p = 0.017$.

[b] Male versus female: mean difference = 1.14 (95% CI: 0.75, 1.73); $p < 0.001$. Male versus nonbinary/gender diverse: mean difference = 3.27 (95%CI: 0.42, 6.12); $p = 0.025$.

[c] Australian versus First Nations Australian and other: mean difference = 2.07 (95% CI: 0.59, 3.55); $p = 0.006$. Australian versus Australian and other: mean difference = 0.80 (95% CI: 0.10, 1.51); $p = 0.026$. Other versus First Nations Australian and other: mean difference = 1.88 (95% CI: 0.37, 3.39); $p = 0.015$.

[d] Parent of carer versus child of carer: mean difference = 2.08 (95% CI: 1.65, 2.50); $p < 0.001$. Parent of carer versus former partner of carer: mean difference = 3.72 (95% CI: 1.15, 6.29); $p = 0.005$.Partner/spouse of carer versus child of carer: mean difference = 1.94 (95% CI: 1.59, 2.30); $p < 0.001$. Partner/spouse of carer versus former partner: mean difference = 3.59 (95% CI: 1.03, 6.15); $p = 0.006$. Sibling of carer versus child of carer: mean difference = 1.78 (95% CI: 0.94.2.63); $p < 0.001$. Sibling of carer versus former partner of carer: mean difference = 3.43 (95% CI: 0.76, 6.11); $p = 0.012$. Friend of carer versus child of carer: mean difference = 2.00 (95% CI: 0.97, 3.05); $p < 0.001$. Friend of carer versus former partner of carer: mean difference = 3.65 (95% CI: 0.91, 6.39); $p = 0.009$. Other of carer versus child of carer: mean difference = 1.90 (95% CI: 0.45, 3.35); $p = 0.010$. Other of carer versus former partner of carer: mean difference = 3.55 (95% CI: 0.62, 6.47); $p = 0.017$.

[e] Older adults versus adults: mean difference = 1.70 (95% CI: 1.35, 2.04); $p < 0.001$. Older adults versus children and youth: mean difference = 3.29 (95% CI: 2.91, 3.68); $p < 0.001$. Adults versus children and youth: mean difference = 1.60 (95% CI: 1.19, 2.00); $p < 0.001$.

type of caring relationships held by male or female carers may affect their sense of social connectedness. Interestingly, most (60.1%) male carers were caring for their partners/spouses, while the majority (46.3%) of female carers were caring for their children. This is consistent with the other finding in this study showing that parent carers experienced higher social isolation.

Studies have shown that people from ethnic minority backgrounds have poor health and well-being, and less social support

TABLE 4 Mean Friendship Scale scores and caregiving relationship variables using independent samples t-tests

	Mean (SD)	Difference (95% CI)	t	df	p-value
Residence status					
Living together	13.67 (5.59)	1.92 (1.54, 2.29)	9.968	5110	<0.001
Not living together	15.59 (5.39)				
Help from others					
No help from others	13.39 (5.70)	1.32 (1.01, 1.63)	8.471	5101	<0.001
Others help	14.70 (5.42)				

TABLE 5 Support services for carers

	Use[a]		Need[a]	
	n	%	n	%
Face-to-face peer support	766	13.7	1412	25.3
Online groups	857	15.3	888	15.9
Face-to-face counselling	406	7.3	1550	27.8
Phone counselling	453	8.1	1133	20.3
Coaching or mentoring	186	3.3	1354	24.2
Emergency respite	247	4.4	1528	27.4
Planned respite	547	9.8	1616	28.9
Carer-specific online information or training	359	6.4	1461	26.2
Carer specific face-to-face information sessions	393	7.0	1556	27.9

[a] Percentages do not add to 100% due to the possibility of receiving or needing multiple services.

(Diaz Garcia et al., 2019; Taylor et al., 2020). This study added that carers who identified as "First Nations Australian and other" (i.e. identified as Aboriginal or Torres Strait Islander in conjunction with a nonaboriginal identity) reported significantly lower social connectedness compared to other groups. This reinforced the fact that greater consideration needs to be given to improve the well-being of Aboriginal and Torres Strait Islander peoples, including carers. Colonisation, environmental impact, trauma and structural discrimination have ongoing negative effects on the well-being of Aboriginal and Torres Strait Islander peoples. These issues need to be addressed properly, and greater consideration should be given to support the social connectedness and holistic well-being of Aboriginal and Torres Strait Islander carers (Green, 2017; Johnston et al., 2013; Lovett et al., 2020).

The other key finding on cultural background is that carers who identified as Australian only were more socially connected than carers who identified their cultural background as "Australian and other". This is consistent with dedicated studies that have focused on carers from culturally and linguistically diverse communities, which often report that such carers experiencing severe social isolation (Poon et al., 2015). Interestingly, carers who identified themselves solely as "Other" (non-Australian) had relatively higher mean FS scores than carers who identified as "Australian and other", although not statistically significant. Future research will be required to investigate the complex relationships between cultural background and social connectedness in more depth.

Parent carers were another group with higher social isolation, consistent with our hypothesis that caring for children and young people was related to diminished social connectedness. This is likely due to the accumulation of the demands of bringing up children and the challenges of caring, resulting in these carers needing to reduce social activities, which likely contributes to feelings of social isolation. This finding speaks to a likely deficit in the service landscape, as services may focus on children at risk of, or diagnosed with, a mental health problem, intellectual disability or autism spectrum disorder without adopting a "whole of family" approach (Foster et al., 2016). Supporting this possibility, 80.9% of people with intellectual disability, 89.9% of people with autism spectrum disorders and 50.2% of people with mental health problems received care from their parents in this study. Studies focusing on parents have shown the importance of social networks and the importance of peer support groups as an important source of emotional support for parents (Gilson et al., 2018; Whiting et al., 2019).

A cohort not featured in previous research is carers of former partners. This group reported higher social isolation than other carers. Former partners were hardly seen in caregiving studies as they were likely only a small percentage of recruited carers or classified among other caregiving relationships (Diminic et al., 2018; Pirkis et al., 2010). It is possible that because the care recipients have minimal social support, their former partners take up the caring role.

An important finding from the perspective of service provision is that carers who reported having unmet needs were likely to be more socially isolated than carers who reported no unmet needs, consistent with another finding that having more unmet needs were correlated with greater social isolation. The first explanation is that carers with less social support likely need more help with caring. This is consistent with another finding in this study that carers with no one to help them were more socially isolated. Studies have reported that carers often want other family members to show concern and help with some caring responsibilities (Keating & Eales, 2017). The second explanation is that carers who have unmet needs may reduce their social interactions so that they can cope with the challenges of caregiving. This is also consistent with findings of qualitative studies that carers may avoid social activities as they have difficulty managing caring tasks, work duties and care for other family members (Keating & Eales, 2017).

TABLE 6 Predictors of Friendship Scale scores in multiple regression analyses

	Unstandardised Coefficients		Standardised coefficients *B*	t	*p*-value	Overall Model	
	B	SE				R^2	*p*-value
Model 1							
Constant	9.455	0.337		28.053	<0.001	0.100	<0.001
Age	0.102	0.005	0.255	18.602	<0.001		
Average hours caring	−0.018	0.001	−0.187	−13.657	<0.001		
Model 2							
Constant	10.044	0.366		27.479	<0.001	0.103	<0.001
Age	0.101	0.005	0.252	18.340	<0.001		
Average hours caring	−0.015	0.001	−0.158	−10.327	<0.001		
Residence status[a]	−0.892	0.213	−0.064	−4.194	<0.001		
Model 3							
Constant	11.687	0.429		27.267	<0.001	0.113	<0.001
Age	0.092	0.006	0.230	16.468	<0.001		
Average hours caring	−0.015	0.001	−0.159	−10.444	<0.001		
Residence status[a]	−0.967	0.212	−0.070	−4.568	<0.001		
Number of people cared for	−0.796	0.110	−0.101	−7.236	<0.001		
Model 4							
Constant	13.665	0.432		31.646	<0.001	0.164	<0.001
Age	0.070	0.006	0.175	12.569	<0.001		
Average hours caring	−0.014	0.001	−0.144	−9.737	<0.001		
Residence status[a]	−0.764	0.206	−0.055	−3.710	<0.001		
Number of people cared for	−0.676	0.107	−0.086	−6.323	<0.001		
Need[b]	−0.461	0.027	−0.236	−17.127	<0.001		
Model 5							
Constant	13.486	0.428		31.524	<0.001	0.185	<0.001
Age	0.083	0.006	0.207	14.726	<0.001		
Average hours caring	−0.013	0.001	−0.141	−9.648	<0.001		
Residence status[a]	−0.445	0.206	−0.032	−2.158	<0.001		
Number of people cared for	−0.710	0.106	−0.090	−6.709	<0.001		
Need[b]	−0.447	0.027	−0.228	−16.739	<0.001		
Help from others[c]	−1.661	0.152	−0.148	−10.901	<0.001		
Model 6							
Constant	22.595	0.418		53.993	<0.001	0.429	<0.001
Age	0.034	0.005	0.084	6.848	<0.001		
Average hours caring	−0.008	0.001	−0.087	−6.949	<0.001		
Residence status[a]	−0.566	0.176	−0.041	−3.211	<0.001		
Number of people cared for	−0.407	0.090	−0.052	−4.538	<0.001		
Need[b]	−0.206	0.023	−0.106	−8.842	<0.001		
Help from others[c]	−1.054	0.131	−0.094	−8.064	<0.001		
K5 scores	−0.676	0.015	−0.538	−44.188	<0.001		

[a] Living apart coded as dummy.

[b] No need coded as dummy.

[c] No help coded as dummy.

Interestingly, receiving carer support was not found to be related to social connectedness in this study. This implies that assessing unmet needs is useful in identifying carers who are socially isolated. It is also possible that there may be many "hidden" carers who have needs but do not seek help from services and remain isolated on their own. Due to the wide recruitment strategy of this study, many "hidden" carers who were not accessing sufficient services and were socially isolated were likely recruited. This possibility is supported by the low percentages of carers using carer support services (Table 5).

Multiple factors such as caring for more people, a longer time spent caring and no help from others accumulate stress and tension for carers on top of their already demanding caring responsibilities. Carers are at risk of coping with the challenges of caring on their own without sufficient social support. Consequently, carers experience psychological distress and reduce their social activities. This likely explains the correlation between K5 and FS scores and why the R^2 became larger when K5 scores were added to the regression model. Another explanation for the large increase in R^2 is carers may be experiencing significant emotional withdrawal due to caregiving burden, resulting in them perceiving to have poor social connectedness. However, this study has not explored emotional withdrawal and caregiving burden.

4.1 | Implications for practice and policy

There are several implications for practice and policy. First, service providers should place emphasis on considering the social support available to carers, such as whether there are any other people providing help, any significant person in carers' lives who are providing meaningful social connections, and whether carers are reducing their social interactions with others due to caregiving challenges. This study has highlighted a few groups of carers—parents, nonbinary/gender diverse, Aboriginal and Torres Strait Islander, culturally and linguistically diverse and young carers—who may need more support to sustain their social connections.

Second, service providers should explore what carers need to manage their caring responsibilities, while those carers with greater support needs should be provided with resources to build necessary social support. This is especially important as having unmet needs was a significant factor affecting social connectedness, while receiving carer support was not. Therefore, service providers should consider that carers who are not turning up for help may be in fact highly socially isolated and distressed, and struggling on their own. Engaging carers to explore their needs while working with clients is crucial in health and social services.

Third, service providers can consider organising social programmes to promote mutual support and networking among carers. As support groups have shown to be promising to promote social connectedness in carers (Petrakis et al., 2014), service providers should consider referring carers to a support group or establish a group of their own. Given the current pandemic where social distancing limits social meetings, service providers can consider organising virtual meetings to promote social connectedness. Policy stakeholders should consider social gatherings as part of an important element in service planning and delivery. Related practice standards and funding mechanisms should include social programmes to promote social connectedness.

4.2 | Limitations

Despite the strengths of this study, there are some limitations. First, the study did not recruit care recipients nor examine their functioning levels. Studies show that the experiences and social connectedness of carers may be affected by the functioning levels of the care recipients (Poon et al., 2017). Including care recipients' data may provide greater insight into the impact of health conditions and disabilities on carers' social connectedness. Second, the survey used convenience sampling to recruit participants, therefore, care should be taken regarding generalisability of the results to other carers. Third, as the survey was a cross-sectional study, it could not detect causation effect of factors affecting carers' social connectedness over time. Fourth, the study did not include rural/urban variable in the analysis. Given the challenges of accessing services for people living in rural areas, future studies need to consider examining this variable. Fifth, the survey did not explore specific children and young people services which limited in-depth analysis.

A further limitation was the data collection period coincided with the first wave of restrictions imposed in response to the COVID-19 pandemic in Australia from May to June 2020. These restrictions may have significantly impacted feelings of social connectedness. While emerging research shows that well-being worsened for Australians during restrictions in 2020 (Biddle & Gray, 2020), pre-existing systemic disadvantages faced by carers would have likely caused carers to be even more isolated and distress during the pandemic (Hofstaetter et al., 2022).

5 | CONCLUSION

This large-scale study has provided much empirical evidence to show the extent of carers' social isolation and how various caregiving factors may influence their perception of social connectedness. Future studies should aim to study how services can help to improve carers' social connectedness over time despite the ongoing challenges of caregiving. Service providers and researchers should redirect their typical attention on carers' psychological distress and caregiving burden, and instead focus on the importance of social connectedness.

AUTHOR CONTRIBUTIONS

Abner Weng Cheong Poon: Conceptualization, Methodology, Analysis, Writing—Original Draft, and Writing—Review & Editing. Lukas Hofstaetter: Conceptualization, Methodology, Data collection, Analysis, Project administration, and Writing—Review &

Editing. Sarah Judd-Lam: Conceptualization, Methodology, Data collection, Project administration, and Writing—Review & Editing.

ACKNOWLEDGEMENTS

We acknowledge and thank the carers who participated in the Carers NSW 2020 National Carer Survey on which the findings are based. The Carers NSW 2020 National Carer Survey was funded by the NSW Department of Communities and Justice and conducted with support from the State and Territory Carer Organisations. Open access publishing facilitated by University of New South Wales, as part of the Wiley - University of New South Wales agreement via the Council of Australian University Librarians.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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How to cite this article: Poon, A. W. C., Hofstaetter, L., & Judd-Lam, S. (2022). Social connectedness of carers: An Australian national survey of carers. *Health & Social Care in the Community*, *30*, e5612–e5623. https://doi.org/10.1111/hsc.13987