Neighbourhood characteristics: Shaping the wellbeing of older Australians

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Neighbourhood characteristics: Shaping the wellbeing of older Australians

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Executive Summary

With Australia's ageing population, it is increasingly important to understand factors that enhance the ability of older adults to retain independence and well-being into later life. While previous research in this area has traditionally focused on the characteristics of individuals, recognition is growing regarding the importance of the social and physical environment also contributing to health and happiness. As older adults are likely to spend a substantial proportion of their time in and around their home, neighbourhoods represent a particularly significant environment for this age group. The purpose of the present study was to increase understanding of the associations between neighbourhood characteristics and ageing well, with a sample of older Australians.

Specifically, we sought to;

(1) explore older adults' perceptions of two aspects of their neighbourhood environment: social cohesion (e.g. trust, belonging) and disorder (e.g. presence of graffiti, vandalism),

(2) consider the relationship between individual characteristics of older adults (e.g. age, gender, marital status) and perceptions of neighbourhood cohesion and disorder, and

(3) examine the relationships between neighbourhood characteristics and markers of ageing well, including self-rated general health, mental health, social support, and loneliness.

A sample of 561 older adults from the Australian Capital Territory, aged 55-94, took part in the research, completing a questionnaire which included demographic information, perceptions of neighbourhood characteristics, and indicators of ageing well. Results indicated a generally high level of satisfaction with the neighbourhood environment. However, a small sub-group of respondents were identified who endorsed multiple negative responses about their neighbourhood. These individuals may be more vulnerable to negative outcomes.

Of the background characteristics, older age and having lived in the same residence for longer were associated with more positive perceptions of the neighbourhood environment. As time in residence appears a particularly important characteristic related to social cohesion, it may be valuable to look at ways of increasing social cohesion for older adults who have recently moved to new neighbourhoods or retirement communities. Neighbourhood characteristics, in turn, showed broad associations with all indicators of ageing well. Perceptions of disorder associated with the physical environment (e.g. no problems with vandalism, the area is kept clean, no vacant/deserted buildings) were mostly associated with physical and mental health, while social cohesion characteristics (e.g. feel a part of the area, most people in the area can be trusted) were associated with social networks/support and loneliness, as well as physical and mental health.

Final regression models that included statistical adjustment for differences in demographic characteristics indicated that higher levels of neighbourhood social cohesion were associated with better physical and mental health, as well as larger social networks/more social support. Taken together, the findings add to the growing body of research providing evidence that neighbourhood characteristics are associated with important facets of later life well-being. Policy measures aimed at enhancing the quality of neighbourhood environments may contribute in a positive way to broader strategies concerned with assisting older Australians to age well in place.

Neighbourhood characteristics and ageing well – a survey of older Australian adults

Introduction

It is widely recognised that the Australian population is ageing, with the proportion of adults aged over 65 expected to make up 25% of the overall population by 2050 (ABS, 2008). These broad demographic changes have led to a growing research and policy interest in promoting quality of life during these later years (Bowling, 2008). The expectations of older adults are also changing, with the current generation approaching older age expecting to retain a high degree of independence and well-being into later life (Bowling & Iliffe, 2011). Consequently, a need exists to better understand how both different characteristics of individuals and different aspects of the broader social and physical environment, contribute to health, independence, and happiness in older adulthood.

Most previous research concerned with the well-being of older adults has focused on the characteristics of individuals, such as health, methods of coping with stress, and financial resources (cf. Charles, 2011; Diener, Suh, Lucas, & Smith, 1999; Reichstadt, Depp, Palinkas, Folsom, & Jeste, 2007). While this research has provided a necessary foundation for understanding ageing well, it is important to also consider how aspects of the immediate social and physical environments that older adults experience on a day-to-day basis could impact on ageing well. Such a perspective provides the basis for this report, which focuses on older Australians' perceptions of their neighbourhood surroundings, and how these perceptions are related to other key aspects of well-being in later life.

Previous research on neighbourhood/community characteristics and well-being

There is growing recognition that 'place matters' in the context of ageing well. This is particularly the case given the preference of many older adults to remain in their homes and the 'ageing in place' National Policy objective (Andrews, 2001; Gardner, 2011). In fact, in Australia, a majority of adults aged 85 years and older continue to live in their own private dwellings (AIHW, 2007). The quality of the neighbourhood environment for well-being might be especially pertinent to older adults, due to the greater relative amount of time they are likely to spend in and around their homes after retirement, and among the oldest-old who may be likely to experience restrictions to mobility, loss of friends through their moving into aged-care facilities, and difficulties with driving (Beard et al., 2009; Gardner, 2011). Thus identifying neighbourhood characteristics associated with ageing well is important for the capacity to improve quality of life for older adults, as it may provide avenues for area-level interventions that could improve the well-being of communities.

The significance of the neighbourhood environment has been documented through various studies of the experiences of older adults themselves. Gardner (2011) spent time observing older adults navigating their neighbourhood environments and determined there were many meaningful sites, which enhanced mood and/or conversation. These included centres, parks, cafes and shops in the wider community, transitory zones people pass through during their daily activities, as well as semi-private places near the home such as gardens and driveways. A key feature was the purposeful navigation of these environments, with each viewed as an opportunity to connect with others and build new networks, or sustain existing friendships. Such interactions appear to promote greater social participation and general life engagement, which are important components of well-being (Bowling & Stafford, 2007). For older women living alone, the neighbourhood environment has similarly been described as important for providing ongoing opportunities for social interactions, as well as helping to alleviate concerns over safety, particularly when there is a strong sense of emotional attachment to the area (Walker & Hiller, 2007).

Other population-based research also suggests neighbourhood quality may be associated with numerous facets of health and well-being. United States census data indicated that living in areas with higher poverty was linked to poorer self-rated health (Subramanian, Kubzansky, Berkman, Fay, & Kawachi, 2006), while neighbourhood characteristics associated with walkability influenced whether or not participants identified as being disabled (Beard et al., 2009). Rantakokko et al. (2009) similarly demonstrated there was a relationship between fear of moving outdoors and the risk of actual walking difficulties over the next 3.5 years, with characteristics of the physical neighbourhood environment such as poor street conditions, noisy traffic, and hills increasing levels of fear. Aspects of the broader neighbourhood context can therefore add to, or interact with characteristics of individuals in shaping well-being (Brown et al., 2009); with the physical environment in particular providing opportunities for, or barriers to, ongoing activity and engagement with the broader community.

Examples of common barriers to the community engagement of older adults include discontinuous or broken footpaths, poor or no public transport, and a lack of lighting, while high levels of traffic and poor street conditions were identified as impacting negatively on individuals with existing mobility impairment. Such barriers are more likely to be found in socioeconomically disadvantaged neighbourhoods, and research supports that individuals from these areas have significantly higher levels of physical impairment than those living in higher SES (Socio Economic Status) neighbourhoods, even when taking into account differences in individual SES (Ross & Mirowski, 2008). Reducing neighbourhood barriers to community engagement, mobility and independence are important for supporting the physical health and independence of our older community residents, as well as reducing isolation (Beard et al., 2009; Stenner, McFarquhar & Bowling, 2011).

The availability of adequate local facilities has also been identified as important in promoting good health, functioning, and social participation. These include good transport, places to walk, health and social services, and recreational facilities/community centres (Brown et al., 2009; Brown, Ang, & Pebley, 2007). Beard et al. (2009) describe how interventions to increase access to transport and provide easy access to shops and recreational facilities can help create urban environments more conducive to healthy lifestyles and community engagement. Enhanced opportunities for social functioning through these services may also promote greater neighbourliness and social cohesion in the area (Bowling & Stafford, 2007). Trust and social cohesion between neighbours in turn enhances comfort and support and a sense of belonging in the neighbourhood, which are ultimately related to greater social participation and well-being (Bowling, 2011; Richard, Gauvin, Gosselin, & Laforest, 2008).

Research has further demonstrated associations of neighbourhood characteristics with mental health and cognitive functioning. Residing in lower SES areas has been identified as a significant predictor of depression across numerous studies (Kim, 2008) and deprived areas have been associated with reduced mental (as well as physical) health (Stafford, Gimeno & Marmot, 2008). Those residing for longer than 10 years in areas classified as deprived not only showed poorer mental health overall, but also did not show the typical gains in mental health over time that have regularly been found in studies of ageing. Research has additionally shown that higher levels of neighbourhood cohesion (i.e. belongingness and friendships) are related to better mental health, even after controlling for differences in social support quality (Gale, Dennison, Cooper, & Sayer, 2011).

While these studies have begun to uncover the relationships between neighbourhood characteristics and well-being, much of the research has used census data and has been based on indirect objective indicators of neighbourhood quality based upon typical characteristics of different postal areas (e.g. Beard et al., 2009; Stafford et al., 2008). Few studies have examined relationships of neighbourhood characteristics to aspects of ageing well using perceptions of neighbourhood quality provided by older adults themselves (c.f. Weden,

Carpiano & Robert, 2008). Moreover, there is scant research examining associations of neighbourhood characteristics with health and well-being among older Australians (for exceptions see Walker & Hiller, 2007; Young, Russell & Powers, 2004). Recognition of these gaps in knowledge, and growing acknowledgement of the importance of the neighbourhood context in influencing health and well-being led to the development of the following study aims.

Study objectives

The purpose of the present study was to examine the relationship between neighbourhood characteristics and key aspects of ageing well in an Australian sample of community-dwelling older adults. The report will:

- Provide information about older adults' perceptions of the positive (social cohesion) and negative (neighbourhood disorder) elements of their neighbourhood;
- Demonstrate the relationship between demographic characteristics of individuals (i.e. age, sex, partner status, employment status, time in residence) and perceptions of neighbourhood cohesion, and neighbourhood disorder;
- Examine the relationships between neighbourhood cohesion/disorder and markers of ageing well, including general self-rated health, mental health, physical activity and quality of social support;
- Add to current knowledge concerning the role of neighbourhood and community characteristics in facilitating the successful ageing of older Australians.

Data and analytic approach

The data was collected in 2009 as part of a larger study of community-dwelling older adults from the Australian Capital Territory. Sampling began with the random selection of 2000 adults from the Australian electoral roll, aged 55 years or older. A small portion of this sample (n=27) were excluded as they did not meet the participation criterion of living within a community setting. The remaining 1973 individuals were mailed an invitation to participate in the research, along with the questionnaire materials. A total of 561 questionnaires were returned (a response rate of 28.4%). Participants completed a range of survey materials as part of the larger study; however, only measures used in the current report are described below.

Demographic characteristics

Information was collected regarding participant age (in years) at the time of the study, gender, ethnicity, marital status, retirement status, driving status, current living arrangement (home owner, renter), and years in their current place of residence.

Neighbourhood characteristics

Perceptions of neighbourhood disorder and cohesion were assessed with a series of eight items used previously in the United States Health and Retirement Study (HRS, 2010). Each item presented participants with two opposing statements and participants were required to indicate on a 7- point scale how much they agreed with the statement (e.g. 1='I feel that I don't belong in this area', 7='I really feel part of this area'). Four of these items considered the social cohesion within the neighbourhood (i.e. trust and a sense of belonging) and the other four considered aspects of physical disorder (i.e. problems with vandalism or graffiti and safety concerns). The scale was scored such that a higher score indicated more favourable neighbourhood characteristics (e.g. a higher level of social cohesion or lower level of physical disorder).

Indicators of ageing well

The self-rated health of participants was assessed using a single item from the RAND-36 (McHorney, Ware, & Raczek, 1993; Ware & Sherbourne, 1992). The item asked participants to rate their general health on a 5-point scale ranging from poor to excellent. Responses are then converted to a 100-point scale, with possible scores 0 (poor) to 100 (excellent).

Mental health was assessed using the 21 item Depression Anxiety Stress Scale (DASS-21, short form version), a widely used indicator of depression, anxiety and stress (Henry & Crawford, 2005). Participants were presented with 7 statements in each domain (depression, anxiety, stress), for example, 'I couldn't seem to experience any positive feeling at all', and asked to indicate on a 4-point scale how much of the time over the past week each item applied to them (e.g. 1= 'did not apply to me at all', 4= 'applied to me very much, or most of the time'). Higher scores indicate higher levels of depression, anxiety and stress.

Social networks and perceived support from family, friends, and neighbourhood social networks were measured using the Lubben Social Network Scale (LSNS-18). Participants completed 6 items for each domain (family, friends, neighbours), for example 'how many relatives do you hear from at least once a month' and 'how often is one of your relatives available for you'. Responses were scored on a 6 point scale (e.g. 1= 'none/never', 6= 'nine or more/always'). Higher scores reflect larger networks and higher perceived social support (Lubben et al., 2006).

Loneliness was assessed using the 3 Item Loneliness Scale (Hughes, Waite, Hawkley, & Cacioppo, 2004). Participants were asked to respond to questions such as 'how often do you feel you lack companionship?' on a 3-point scale (1= 'hardly-ever or never', 3= 'often'). Higher scores indicate a greater degree of loneliness.

Sample characteristics

The characteristics of the study sample are provided in Table 1. Consistent with the AIHW (2007) report, a majority of the sample owned their own home and resided within houses (rather than villas or units). Many participants had lived in their current home for a substantial period of time, the average time in residence approaching 19 years.

Table 1. *Sample characteristics.*

N		553 - 561[a]
Age	Age range	55-94
	Age, *M (SD)*	65.39 (8.29)
Gender	Female	51.5%
Ethnicity	Caucasian	71.8%
	Asian	2.0%
	African-American	1.1%
	Not specified/Other	25.1%
Marital status	Married/Defacto	73.3%
	Separated/Divorced	14.0%
	Widowed	8.8%
	Never married	3.9%
Employment	Working full-time	32.9%
	Partially retired	14.1%
	Fully retired	53.0%
Voluntary work	Volunteer	50.7%
Education	<5 years secondary	37.4%
	5+ years secondary	62.5%
Home ownership	Own residence	89.8%
Property type	House	80.1%
	Townhouse/Villa	13.6%
	Unit/Apartment	4.7%
Time in residence	Range of time in residence	0-64 years
	Time in residence, *M (SD)*	18.82 (13.37)

[a]Ns varied on account of different proportions of missing data across survey items
M Mean *(SD)* Standard Deviation

Perceptions of social cohesion and physical disorder in participants' communities

Our initial analysis was concerned with providing a broad picture of the nature of our participants' perceptions of the positive and negative aspects of their neighbourhood environments. To examine the pattern of responses to each individual neighbourhood item, percentages of individuals responding in agreement with the statement on the left (score 1-3), responding neutrally (score 4), or responding in agreement with the statement on the right (score 5-7) were calculated.

As shown across Figures 1-8, the majority of responses to each item indicated favourable perceptions of the neighbourhood. On average three quarters (64.7% - 87%) of people perceived their current living environment as positive. The majority of participants perceived their neighbourhoods as clean (75.6%), most were not concerned about vacant or deserted houses or storefronts in the area (87%), and most reported no significant problems with vandalism (77.6%; Figures 2, 6, 8). Interestingly though, a significant minority (approximately 21%) of participants reported that people would be afraid to walk alone after dark in their neighbourhood (Figure 4).

Participants largely felt a sense of belongingness in their neighbourhood (74.4%), and perceived the people in the area as friendly (78%) and trustworthy (73.6%; Figure 1, 3, 5). However, over a third (35.3%), were not confident that if they were in trouble somebody in the area would help them (Figure 7).

While the findings suggest most of this sample of older adults held generally positive perceptions of their community and neighbourhood area, it is important to draw attention to indications that at least 10% of participants (with the exception of Item 8 regarding vacant buildings, 8.7%) showed negative perceptions of the neighbourhood environment in relation to each item (i.e. low levels of social cohesion or high levels of physical disorder). To explore the negative aspects of the

Figure 1. Belongingness in neighbourhood area (Item 1).

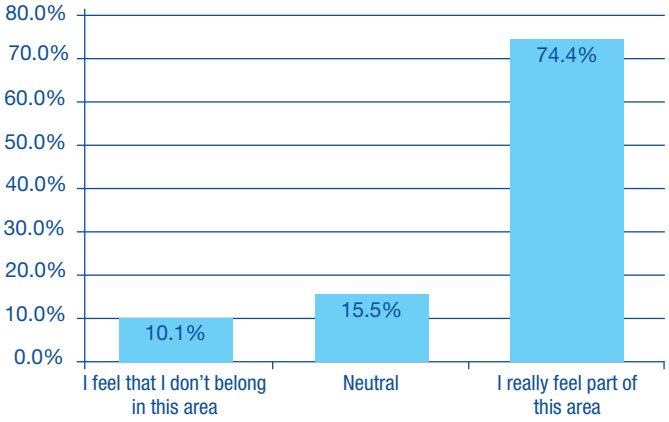


Figure 2. Problems with graffiti and vandalism (Item 2).

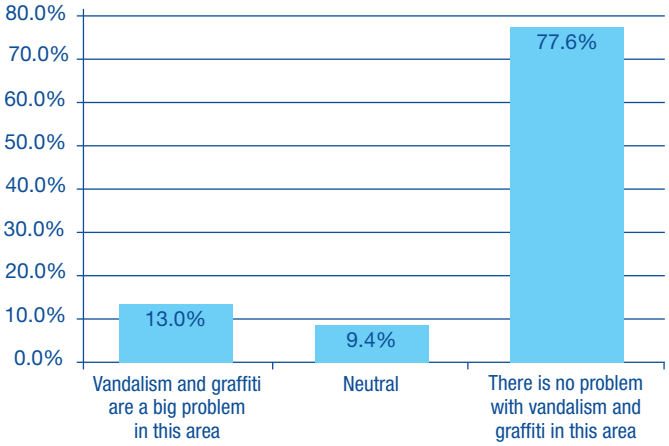


Figure 3. Trustworthiness of people in neighbourhood (Item 3).

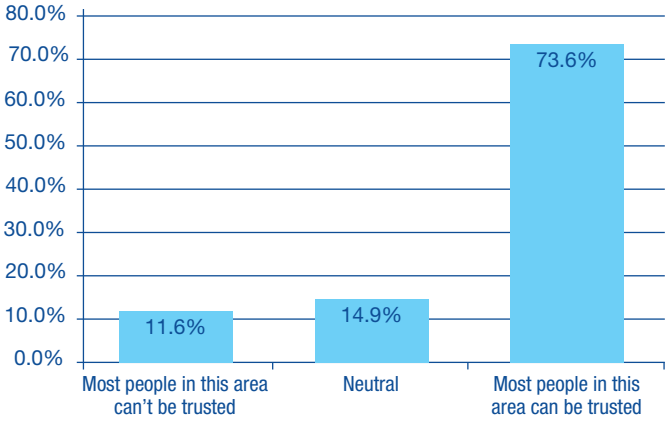
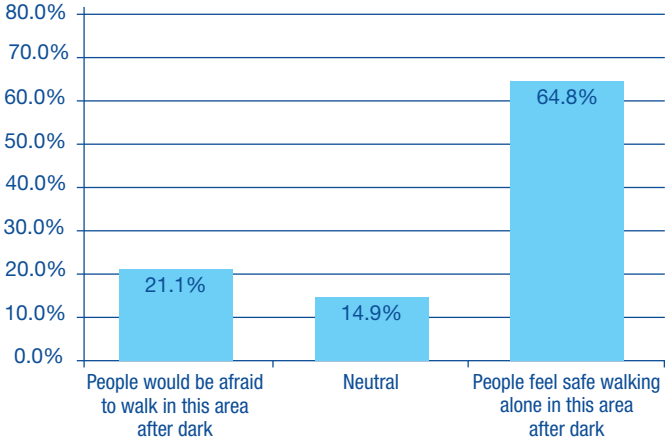


Figure 4. Perception of safety to walk after dark in neighbourhood (Item 4).



neighbourhood environment further, we considered patterns of responses across individuals.
A score was calculated for how many times each individual gave a negative response, ranging from 0 (answering every item positively) to 8 (answering every item negatively). Figure 9 displays the distribution of multiple negative responses.

Almost half of all participants reported being satisfied with all eight aspects of their neighbourhood environment. A further 39% of the sample expressed dissatisfaction with just one or two elements of their neighbourhood. However, a small proportion of participants (6.9%), endorsed four or more negative responses, suggesting overall dissatisfaction with their neighbourhood. These individuals may be more vulnerable to negative outcomes through the cumulative effect of dissatisfaction across multiple facets of neighbourhood life and could be an important group to identify and target for interventions to enhance the physical or social characteristics of the neighbourhood environment.

Figure 5. Perception of friendliness of people in the area (Item 5).

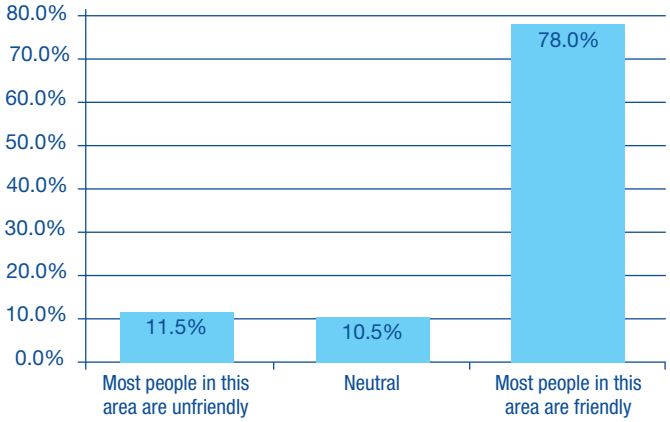


Figure 6. Perception of cleanliness of the area (Item 6).

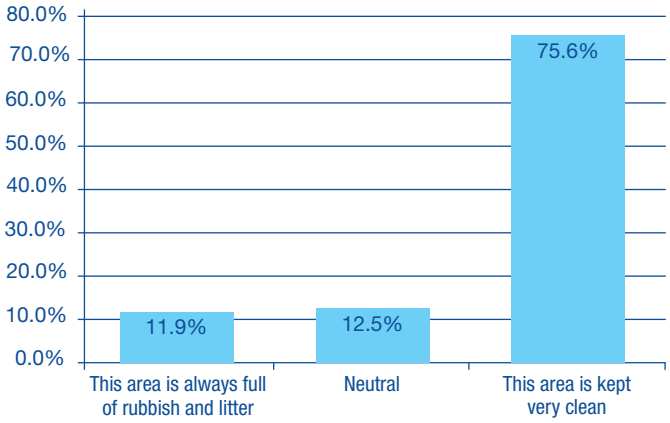


Figure 7. Perception neighbours would help if you were in trouble (Item 7).

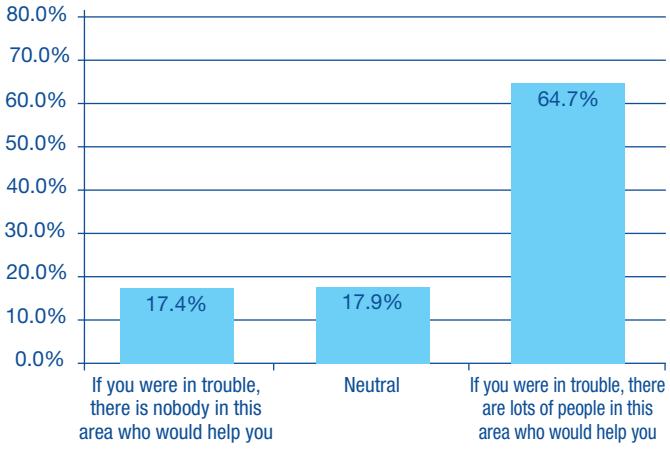
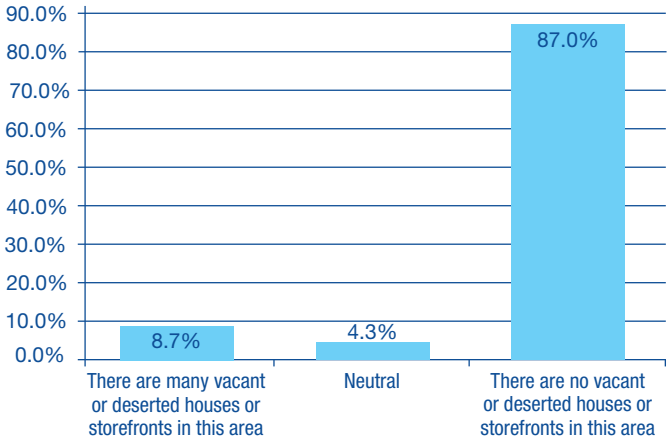
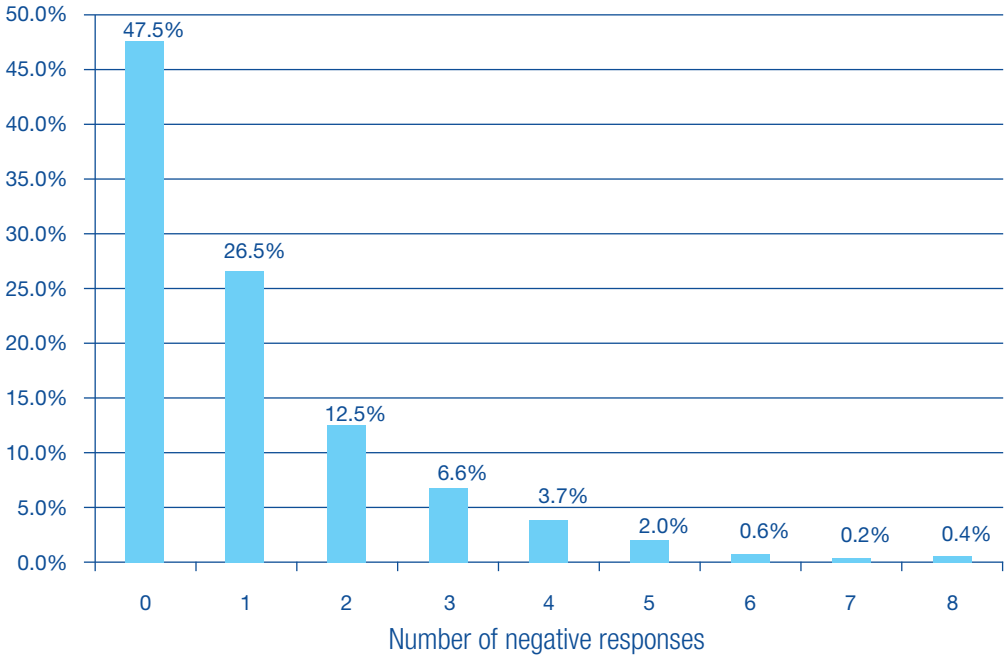


Figure 8. Perception of deserted building in the neighbourhood (Item 8).



The results shown in Figure 9 also indicate that there was not an identifiable sub-group of participants who consistently reported negative perceptions across all items (i.e. very few older adults reported six, seven, or eight negative aspects of their neighbourhood environment). This suggests that every neighbourhood may have a unique combination of perceived strengths and limitations.

Figure 9. Percentage of participants endorsing multiple negative responses about their neighbourhood characteristics.



Section summary

- Almost 50% of older adults expressed satisfaction with all aspects of their neighbourhood environment.
- The most commonly identified neighbourhood problems were perceptions related to safety of walking in the area after dark and that help would not necessarily be available to those in trouble.
- Very few older adults endorsed more than 5 negative perceptions, suggesting the proportion of negative responses to each item were not indicative of a single sub-group of individuals with broadly negative perceptions of their neighbourhood. Instead, every neighbourhood likely has a unique profile of strengths and limitations in social cohesion and physical disorder.
- A small group of older adults reported 3-4 negative perceptions relating to their neighbourhood environment. These individuals may be more vulnerable to negative outcomes.

Relationships between individuals' background characteristics and neighbourhood characteristics

Our next analyses were concerned with the relationship between individual demographic characteristics and perceptions of the neighbourhood. The results below are based on examination of differences in neighbourhood perceptions as a function of gender, partner status, age, time in residence, and employment status.

Gender

Overall, the assessments of neighbourhood characteristics by men and women were similar (see Table 2). However, women were significantly less likely to report the neighbourhood as a safe place to be walking alone after dark ($t(549) = 5.02$, $p<.001$). This is important as there may be implications for the mobility and independence of females and reduced opportunity to partake in social activities that take place after dark. In areas with high proportions of older adults improved lighting or a greater security presence may help alleviate some of these safety concerns (Foster & Giles-Corti, 2008; Wilcox, Bopp, Oberrecht, Kammermann, & McElmurray, 2003).

Table 2. *Neighbourhood characteristics average score by gender.*

A lower score (closer to 1) indicates stronger agreement with the statement on the left	**Male (S.D.)**	**Female (S.D.)**	**A higher score (closer to 7) indicates stronger agreement with the statement on the right**
I feel that I don't belong in this area	5.48 (1.47)	5.60 (1.59)	I really feel part of this area
Vandalism and graffiti are a big problem in this area	5.48 (1.46)	5.43 (1.67)	There is no problem with vandalism and graffiti in this area
Most people in this area can't be trusted	5.38 (1.41)	5.40 (1.59)	Most people in this area can be trusted
People would be afraid to walk in this area after dark	5.34 (1.53)	4.61*** (1.86)	People feel safe walking alone in this area after dark
Most people in this area are unfriendly	5.39 (1.46)	5.63 (1.53)	Most people in this area are friendly
This area is always full of rubbish and litter	5.29 (1.28)	5.34 (1.56)	This area is kept very clean
If you were in trouble, there is nobody in this area who would help you	4.91 (1.46)	5.03 (1.71)	If you were in trouble, there are lots of people in this area who would help you
There are many vacant or deserted storefronts in this area	6.21 (1.23)	6.00 (1.72)	There are no vacant or deserted houses or storefronts in this area

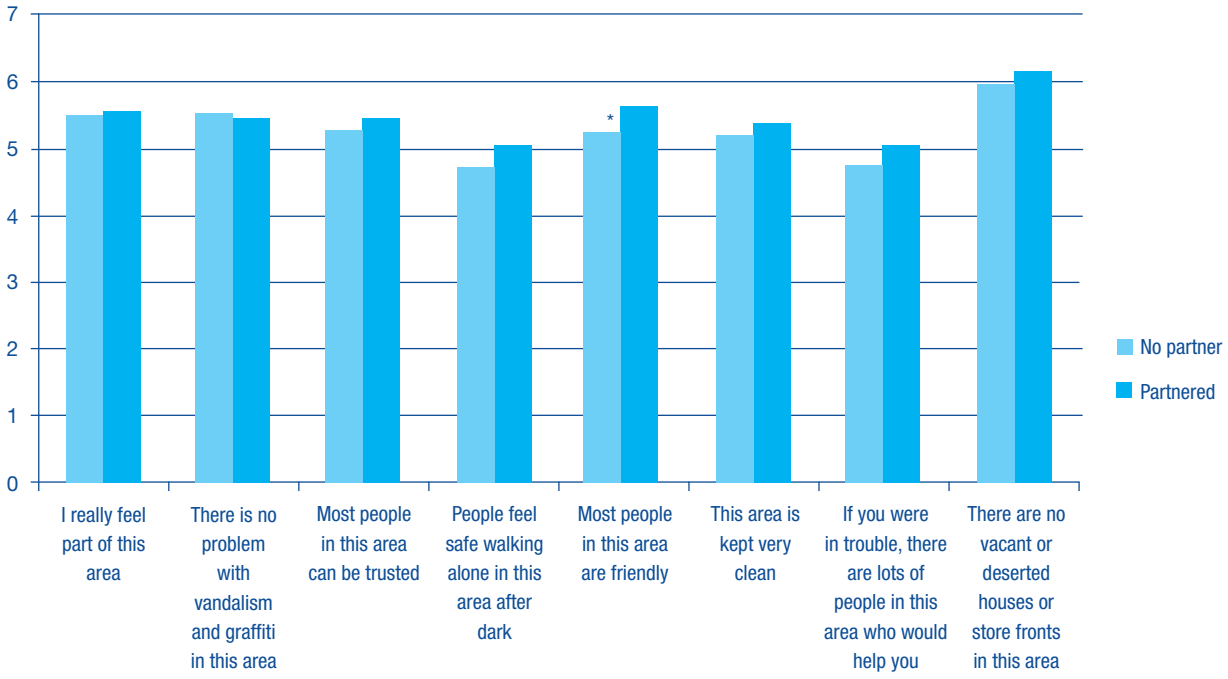
(S.D.) Standard Deviation

* p<.05, **p<.01, ***p<.001 (one-tailed significance)

Partner status

Comparisons between partnered (married or de-facto) and non-partnered (separated, divorced, widowed, or never married) individuals indicated that partnered individuals were significantly more likely to report that most people in their neighbourhood were friendly, ($t(540) = 20.83$, $p<.05$). No difference was found in the other perceptions of the neighbourhood environment. This is an interesting finding as those older adults without a partner could be expected to rely more on neighbourhood relations and friendships for social engagement and support (Cornwell, Laumann, & Schumm, 2008; Newall et al., 2009; Scott et al., 2007; Walker & Hillier, 2007; Wenger, 1997).

Figure 10. Average neighbourhood order and disorder item scores, by partner status.

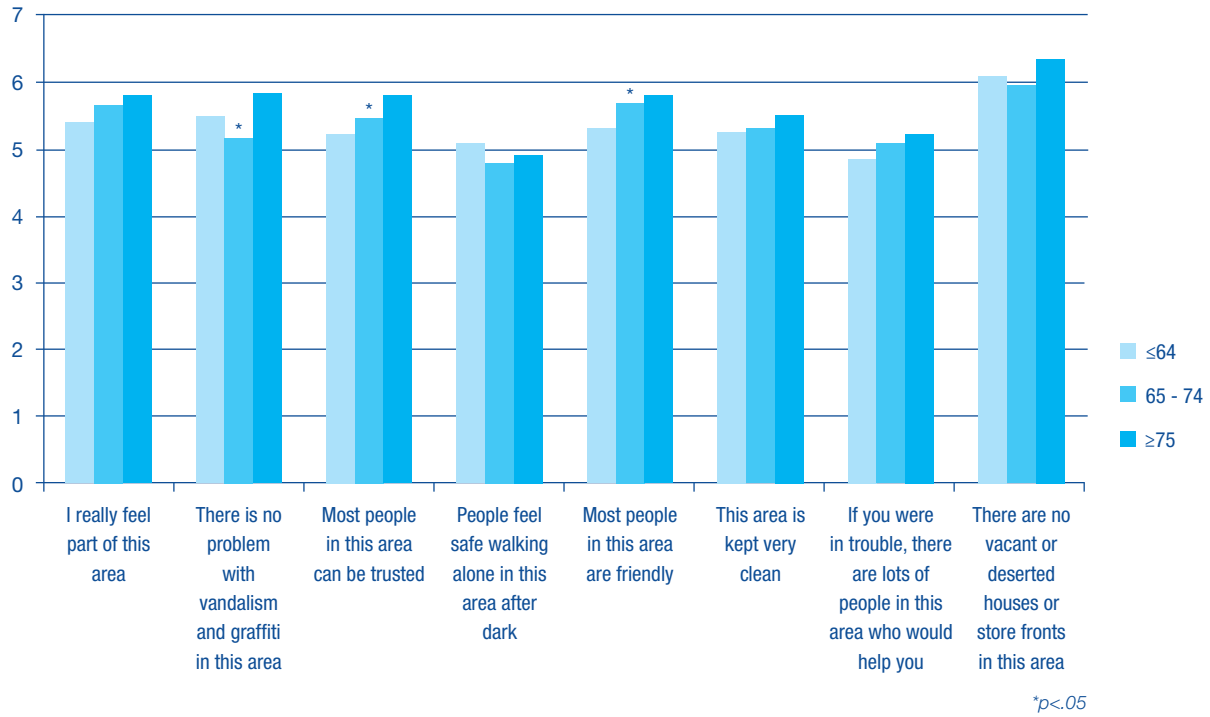


*p<.05

Age

Differences in neighbourhood perceptions were also examined by age. Figure 11 illustrates the average rating for respondents aged 64 and under, 65-74 years, and 75+, on each item. Although older adults in general tended to perceive their neighbourhood more positively compared to the younger respondents, few statistically significant differences emerged. Age groups differed significantly on their perceptions of problems with vandalism and graffiti in the area, ($F(2, 546) = 4.811$, $p<.01$), with those over 75 reporting significantly better neighbourhood characteristics (i.e. fewer problems) compared to those aged 65-74. Similarly, perceptions that most people in the area could be trusted differed by age category, ($F(2, 544) = 5.10$, $p<.01$), with adults 75 or older displaying significantly higher levels of trust within their neighbourhood in comparison to those 64 or younger. Perceptions that most people in their neighbourhood were friendly also differed according to age group, ($F(2, 542) = 5.43$, $p<.01$). Those aged 64 or under were significantly lower than the other age groups in their ratings of the friendliness of people within their neighbourhood.

Figure 11. Average neighbourhood order and disorder item scores, by age group.



The finding that those aged 64 or younger provided significantly lower ratings regarding the friendliness and trustworthiness of others in their neighbourhood area is an interesting result, which may stem from members of the younger group having less familiarity with their neighbours due to their still being active in the workforce, and thus typically spending less time around the home (ABS, 2003; Brown et al., 2009; Krantz-Kent & Stewart, 2007). It is also possible that the more positive perceptions expressed by the older age groups in general are the result of shifting motivational priorities with age that are reflected in a growing emphasis on promoting close relationships, and an increasing emphasis on positive aspects of emotional experience (Carstensen, Fung, & Charles, 2003; Mather & Carstensen, 2005).

Time in residence

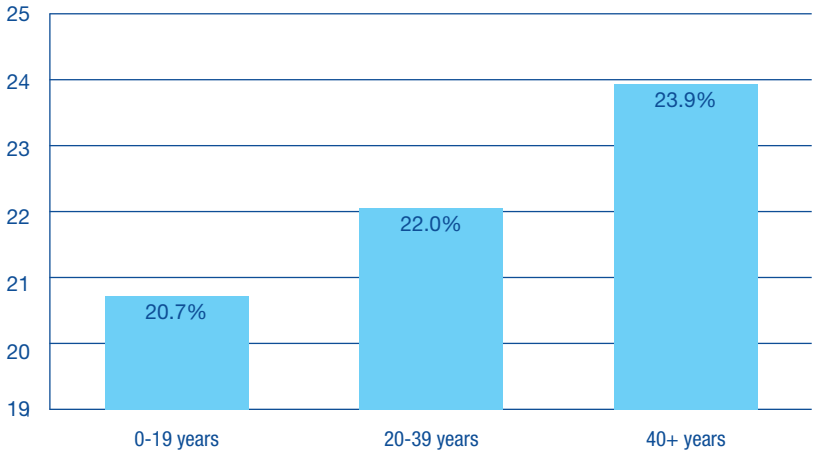
The association between the length of time in current residence and perceptions of neighbourhood cohesion and disorder were examined using correlational analyses (see Table 3).

Table 3. Correlations between neighbourhood characteristics and time in residence.

Neighbourhood characteristics	Size of relationship (r)
Feel part of this area	.201***
No problems with vandalism and graffiti	-.031
Most people in the area can be trusted	.161***
Feel safe walking alone after dark	-.035
Most people in this area are friendly	.115**
The area is kept very clean	.061
If in trouble, lots of people in area would help	.115**
No vacant or deserted houses or shops	-.051
(r) correlation coefficient	* p<.05, **p<.01, ***p<.001 (one-tailed significance)

All four indicators of social cohesion were significantly and positively related to time in residence, indicating that those who had spent more time in their current place of residence were more likely to report a greater sense of belonging, perceptions of trust, friendliness and helpfulness among their neighbours. However, time in residence was not significantly related to any aspects of neighbourhood disorder. To illustrate the broad association of time in residence (grouped as 0-19 years, 20-39 years, 40+ years) with social cohesion, scores for each of the four social cohesion items were summed to produce a total social cohesion score (with possible scores ranging from 4-28). Figure 12 displays the average level of cohesion across the different categories of time in residence.

Figure 12. Mean social cohesion score by time in residence (years).



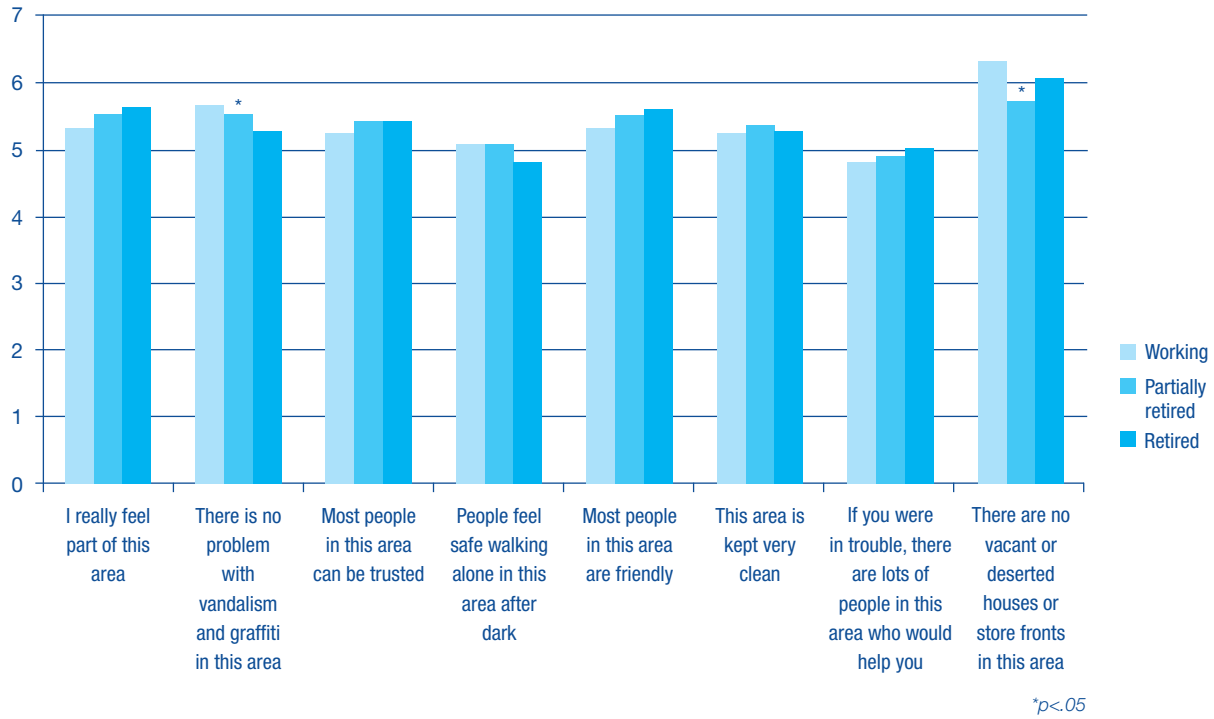
There are several possible reasons for this association. One is that those residing in their residence for longer are more likely to be older and spend more time in the neighbourhood (as discussed previously). It also seems likely that long-term residents within an area have developed stronger bonds with their neighbours, which facilitate aspects of social cohesion (such as friendliness, trust, and helping one another out). This may be strongest in areas where there has been little change of ownership, such that these bonds have been sustained for several decades. The results may also represent a selection effect, with those who are happy in their neighbourhood being less likely to relocate.

As social cohesion (including support from neighbours) may facilitate longer periods of independent living, it will be important to consider how to develop higher social cohesion for older adults moving into new neighbourhood areas. Given younger generations are more likely to have moved home throughout their life course (due to factors such as higher rates of renting, divorce, and changes in labour participation) (Caldera Sánchez & Andrews, 2011; Kryger, 2009) it will also be pertinent to consider whether more transient residential populations will have broader implications for levels of neighbourhood cohesion as these groups age.

Employment status

As retirement status may influence the amount of time a person spends within their neighbourhood, the influence of employment/retirement status on perceptions of the neighbourhood was also considered. Figure 13 shows the pattern of responses to each neighbourhood item for those still working, partially retired, and fully retired.

Figure 13. Mean scores for neighbourhood order/disorder items by retirement status.



*p<.05

Few significant differences in neighbourhood perceptions based on employment status were identified. A significant difference was only detected as a result of retirement status for perceived problems with vandalism and graffiti ($F(2, 542) = 3.63$, $p<.05$); and for the perception of vacant and deserted houses/stores in the area ($F(2, 543) = 4.20$, $p<.05$). Those persons still working were significantly more likely to perceive there to be no problems with vandalism and graffiti in the area than those who were retired. Those still in the work force were also significantly more likely to report there to be no problems with vacant buildings in their neighbourhood than those partially retired but these perceptions did not differ from those of retirees.

Section summary

- Of the background characteristics, age and time in residence were most strongly associated with perceptions of the neighbourhood environment.
- Time in residence appears to be an important characteristic positively related to perceived social cohesion. As such, it may be important to look at ways of increasing social cohesion for older adults who have recently moved to new neighbourhoods or into retirement communities.
- Older adults held more positive neighbourhood perceptions relative to midlife adults, possibly due to greater time spent in the neighbourhood, or as a result of age-related changes in aspects of emotion and motivation.
- Women were significantly less likely than men to report the neighbourhood as a safe place to be walking alone after dark.
- Partnered individuals were significantly more likely to report most people in their neighbourhood were friendly compared to non-partnered older adults. Non-partnered older adults may benefit from greater neighbourhood activities and opportunities to form friendships with their neighbours.
- Associations of neighbourhood perceptions with retirement status were mixed. Those persons still working were more likely to perceive there to be no problems with vandalism and graffiti or with vacant buildings in their neighbourhood compared to those who were retired, or partially retired respectively.

Neighbourhood characteristics and ageing well

We considered associations of neighbourhood perceptions with a range of measures that reflect different aspects of ageing well. These included self-reported general health, depression, anxiety, stress, size of social networks and loneliness. The following section provides an overview of our findings (note only significant associations are displayed in the tables that follow).

General health

Self-rated health was associated with six characteristics of the neighbourhood environment (see Table 4). Good general health was positively associated with perceived belongingness ('felt more a part of their area'), trust ('felt people in the area could be trusted'), and the perceived helpfulness of people in the neighbourhood. Better general health was also associated with not perceiving problems with vandalism, graffiti or rubbish in their area, and feeling it was safe for people to walk in their neighbourhood after dark.

Table 4. Neighbourhood characteristics associated with ratings of general health.

Neighbourhood characteristics related to loneliness	Size of relationship (r)
Feel part of this area	.113**
No problems with vandalism and graffiti	.084*
Most people in the area can be trusted	.104**
Feel safe walking alone after dark	.131**
The area is kept very clean	.111**
If in trouble, lots of people in area would help	.092*

(r) correlation coefficient * p<.05, **p<.01, ***p<.001 (one-tailed significance)

There are several possible explanations for why neighbourhood characteristics may relate to health. People who feel a part of the area may be more likely to participate in neighbourhood activities which involve physical activity (Bowling & Stafford, 2007). Similarly, the role of physically appealing surroundings free from rubbish, graffiti, or fear for safety may contribute to health through providing greater opportunities for, and enjoyment of, outdoor activities that promote health, such as taking a walk (e.g. Rantakokko et al., 2009; Weden, Carpiano, & Robert, 2008). Finally, the availability of support from neighbours to help if you are in trouble or need assistance (e.g. transport to medical appointments) may enable individuals to take better care of their health (Clarke & Nieuwenhuijsen, 2009).

Depression, anxiety, stress (mental health)

Characteristics of the neighbourhood environment were also associated with aspects of mental health, including symptoms of depression, anxiety and stress (see Table 5). Feeling part of the neighbourhood area was related to lower levels of depressive symptoms, anxiety symptoms, and stress. Similar findings emerged for perceptions of people in the area as friendly and feeling people in the area would provide help if it was required. This highlights that neighbourhood surroundings may play a role in the experience of stress, anxiety and depression.

Table 5. Neighbourhood characteristics associated with mental health.

	Size of relationship (r)		
Neighbourhood characteristics related to mental health	**Depression**	**Anxiety**	**Stress**
Feel part of this area	-.232***	-.152***	-.235***
Most people in the area can be trusted	-.164***	-.174***	-.205***
Feel safe walking alone after dark	-	-.081*	-
Most people in this area are friendly	-.203***	-.116**	-.191***
The area is kept very clean	-.183***	-.112**	-.165***
If in trouble, lots of people in area would help	-.214***	-.154***	-.199***
No vacant or deserted houses or shops	-	-.112**	-.130**
(r) correlation coefficient	* p<.05, **p<.01, ***p<.001 (one-tailed significance)		

Social networks and support

Social networks, and the support and engagement they provide, have been associated with a wide variety of positive outcomes for mental health and well-being. The following analysis sought to explore how characteristics of the neighbourhood relate to social networks across three distinct social network domains of friends, neighbours, and family.

Table 6. Neighbourhood characteristics associated with social network size.

	Size of relationship (r)		
Neighbourhood characteristics related to social network size	**Family**	**Neighbours**	**Friends**
Feel part of this area	.108**	.291***	.129**
Most people in the area can be trusted	.103*	.195***	-
Most people in this area are friendly	.168***	.285***	.108**
The area is kept very clean	-	.164***	.076*
If in trouble, lots of people in area would help	.139***	.406***	.175***
(r) correlation coefficient	* p<.05, **p<.01, ***p<.001 (one-tailed significance)		

As expected, social cohesion within the neighbourhood (i.e. feel part of the area, people are friendly and trustworthy) was associated with reports of larger social networks in all domains. Not surprisingly, the strongest associations were evident in the case of neighbour networks (as reflected in Table 6). The cleanliness of the area and absence of rubbish and litter were similarly associated with larger networks of both neighbours and friends. This finding suggests that when the environment is not aesthetically pleasing, older adults may be discouraged from spending time in their yard or neighbourhood where informal interactions and incidental contact with neighbours often take place. Similarly, a neighbourhood environment that is full of litter may discourage older adults from inviting friends to their area for social gatherings. Thus a combination of the social and physical characteristics of the neighbourhood may influence social network size and support obtained through incidental contact with neighbours and organised interactions with friends.

Loneliness

Given the association between neighbourhood characteristics and social networks, a relationship was also expected with perceived loneliness. Table 7 demonstrates that all of the social aspects of the neighbourhood environment (feeling a part of the area, perceiving neighbours to be friendly and trustworthy, and believing people would help if you were in trouble) were associated with lower levels of loneliness.

Table 7. Neighbourhood characteristics associated with loneliness.

Neighbourhood characteristics related to general health	Size of relationship (r)
Feel part of this area	-.216***
Most people in the area can be trusted	-.159***
Most people in the area are friendly	-.247***
The area is kept very clean	-.174***
If in trouble, lots of people in area would help	-.323***

(r) correlation coefficient * p<.05, **p<.01, ***p<.001 (one-tailed significance)

This suggests social support from the neighbourhood may be an important source of overall support (i.e. Brown et al., 2009; Gardner, 2011) and may play a role in helping to reduce feelings of loneliness and isolation. Given the high percentage of time many older adults spend within their home and immediate neighbourhood environment (Horgas, Wilms, & Baltes, 1998; Qiu et al., 2010; Webber, Porter, & Menec, 2010), this is likely to be a primary place where social interactions occur.

Section summary

- Neighbourhood characteristics were related to all indicators of well-being.
- Social cohesion (as opposed to physical disorder) items were most consistently related to positive well-being outcomes.
- Greater social cohesion and less disorder (i.e. no vandalism, graffiti, area clean, people feel safe walking after dark) was associated with better general health.
- Mental health was associated with seven of the eight neighbourhood items. Overall, a more positive neighbourhood environment was associated with less depression, anxiety and stress.
- Greater neighbourhood social cohesion was associated with larger social networks and lower levels of perceived loneliness. Interestingly, the cleanliness of the area was also related to both of these outcomes, suggesting the presence of clean and pleasant outside spaces within the neighbourhood may play a role in facilitating social interactions.

Neighbourhood characteristics and ageing well – adjusted models

So far, our analyses have focused on simple bivariate associations of perceptions of neighbourhood characteristics with socio-demographic characteristics and markers of ageing well. Our next and final series of analyses were aimed at providing a more stringent test of the importance of neighbourhood cohesion to ageing well by simultaneously statistically adjusting for associations of socio-demographic characteristics with ageing well outcomes using multiple regression analysis. We were also interested in the possibility that the relationships between neighbourhood cohesion and aspects of ageing well might vary as a function of other individual (or socio-demographic) characteristics such as age and gender. Consequently we tested statistical interactions between neighbourhood cohesion and socio-demographic variables in the prediction of ageing well outcomes.

Analysis

For our final series of analyses, the four items measuring social cohesion were summed to produce a total score (ranging from 4-28). The physical disorder items were not included in this analysis as the correlations between the individual items were weak, indicating that the items could not be reliably combined to form a meaningful overall index of disorder. Hierarchical multiple regressions were conducted for each of the four main well-being indicators (general health, psychological distress, total social network, and loneliness), controlling for the influence of the demographic characteristics. Overall psychological distress was calculated by summing scores on the depression, anxiety, and stress scales. Higher scores indicated higher levels of distress. The social network scores for the friends, family, and neighbourhood domains were summed to produce a total social network/support score. At the first step of each model social cohesion was added. At step 2, all background/demographic variables were added. Then at step 3, interactions between variables were considered. Tables 8-11 present the results of the full regression models for steps one and two, as well as any significant interaction effects at step 3. As interaction effects were being considered, social cohesion and length of time in residence were centred at their mean for these analyses.

General health

Table 8 presents the results of the model examining social cohesion as a predictor of general health. Overall the model was significant, ($F(8, 520) = 8.79$, $p<.001$), with higher levels of neighbourhood social cohesion independently associated with better self-reported health after adjustment for the socio-demographic characteristics. Results also indicated that greater time spent in the current residence, not being retired, and being in the younger age group were associated with better health.

Table 8. Summary of regression analysis for variables predicting General Health (RAND).

Variable	B	ß
Constant	73.30	
Social cohesion	0.73	.14**
Age group		
65-74 compared with ≤64	-4.32	-.08
≥75 compared with ≤64	-17.02	-.24***
Gender	-3.17	-.07
Retirement status		
Part retired compared with employed	-3.57	-.05
Retired compared with employed	-8.06	-.17**
Partnered	0.95	.02
Time in residence	0.23	.13**

N = 529; * p<.05, ** p<.01, *** p<.001

Psychological distress

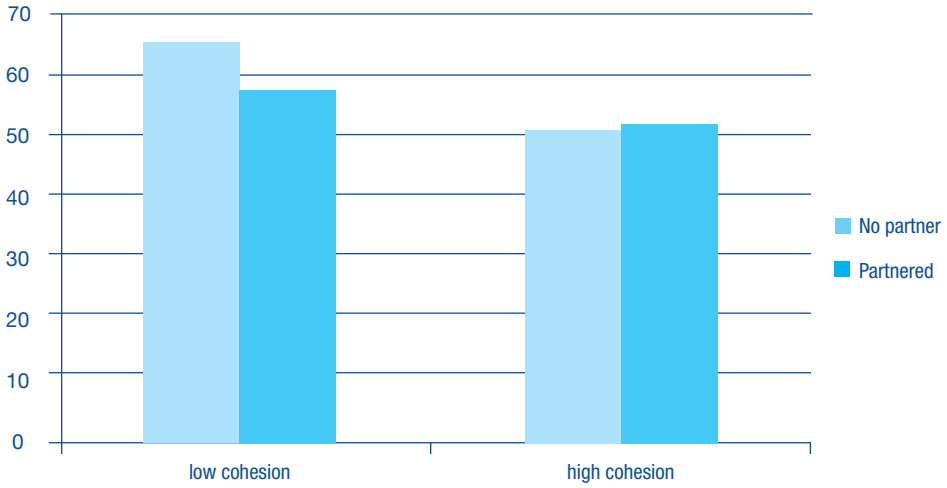
The model predicting psychological distress was significant, ($F(9, 510) = 8.68$, $p<.001$), with higher levels of social cohesion related to lower levels of psychological distress (Table 9). A significant interaction also emerged, such that the impact of having a partner on psychological distress differed for those reporting higher and lower levels of social cohesion. Figure 14 demonstrates the nature of the interaction, with psychological distress higher amongst those living in an area perceived to be low in social cohesion if they did not have a partner. This suggests that any negative impacts of low social cohesion on mental health might be more strongly felt among those without a partner.

Table 9. Summary of regression analysis for variables predicting psychological distress.

Variable	B	ß
Constant	58.18	
Social cohesion	-1.43	-.49***
Age group		
65-74 compared with ≤64	-0.32	-.01
≥75 compared with ≤64	3.03	.08
Gender	0.79	.03
Retirement status		
Part retired compared with employed	-1.03	-.03
Retired compared with employed	-2.00	-.07
Partnered	-3.44	-.11*
Time in residence	-0.01	-.01
Partner x Social cohesion	0.86	.24**

N = 520; * p<.05, ** p<.01, *** p<.001

Figure 14. Interaction between social cohesion and partner status on psychological distress.



Social networks and support

Social cohesion was independently associated with social support, with higher neighbourhood social cohesion associated with larger overall social networks, ($F(8, 497) = 10.08$, $p<.001$). Gender was also a significant predictor, with women reporting larger networks than men.

Table 10. Summary of regression analysis for variables predicting social networks/support (LSNS).

Variable	B	ß
Constant	43.96	
Social cohesion	0.87	.30***
Age group		
65-74 compared with ≤64	2.06	.07
≥75 compared with ≤64	-1.31	-.03
Gender	4.05	.15***
Retirement status		
Part retired compared with employed	1.71	.04
Retired compared with employed	-1.00	-.04
Partnered	-1.03	-.03
Time in residence	0.08	.08

N = 506; * p<.05, ** p<.01, *** p<.001

Loneliness

The model used to predict loneliness (Table 11), ($F(11, 517) = 9.31$, $p<.001$), indicated that overall neighbourhood social cohesion was not directly associated with loneliness after controlling for demographic characteristics. The only significant main effect found was for partner status, with partnered persons reporting lower levels of loneliness. However, significant interactions emerged between retirement status and social cohesion, and time in residence and social cohesion. Figures 15 and 16 depict the nature of these interactions. When social cohesion was low partially retired individuals had the highest levels of loneliness, while when social cohesion was high loneliness was higher among those who were employed. The interaction of time in residence with social cohesion indicated that greater social cohesion was related to lower loneliness among those who had lived in their residence for a shorter time period. However social cohesion was not strongly associated with loneliness among those who had lived in their residence for a longer time period.

Table 11. Summary of regression analysis for variables predicting loneliness.

Variable	B	ß
Constant	1.65	
Social cohesion	-0.01	-.13
Age group		
65-74 compared with ≤64	0.00	.00
≥75 compared with ≤64	0.04	.03
Gender	0.03	.03

Table 11. continued

Retirement status		
Part retired compared with employed (R1)	0.05	.03
Retired compared with employed (R2)	-0.09	-.08
Partnered	-0.25	-.21***
Time in residence	0.00	-.04
R1x Social cohesion	-0.02	-.08
R2 x Social cohesion	-0.02	.15*
Time in residence x Social cohesion	0.00	.10*

N = 529; * p<.05, ** p<.01, *** p<.001

Figure 15. Interaction between social cohesion and retirement status on loneliness.

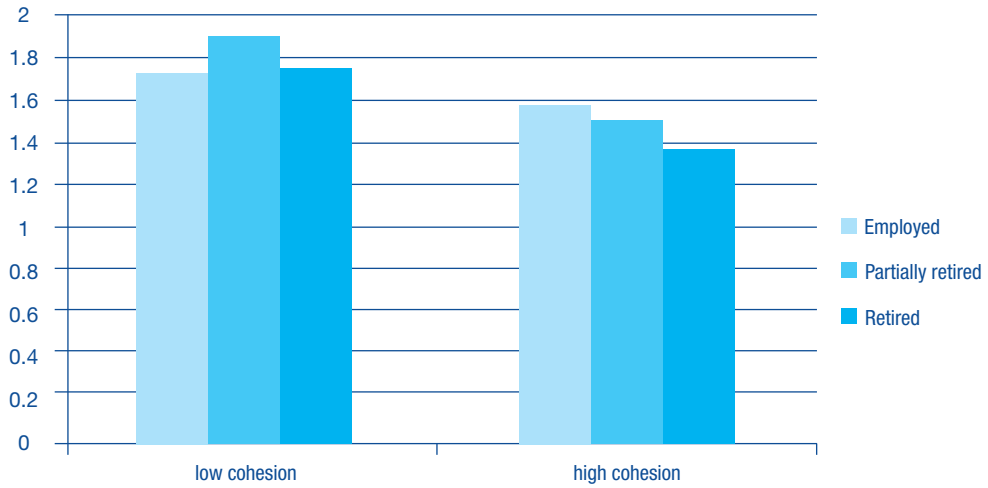
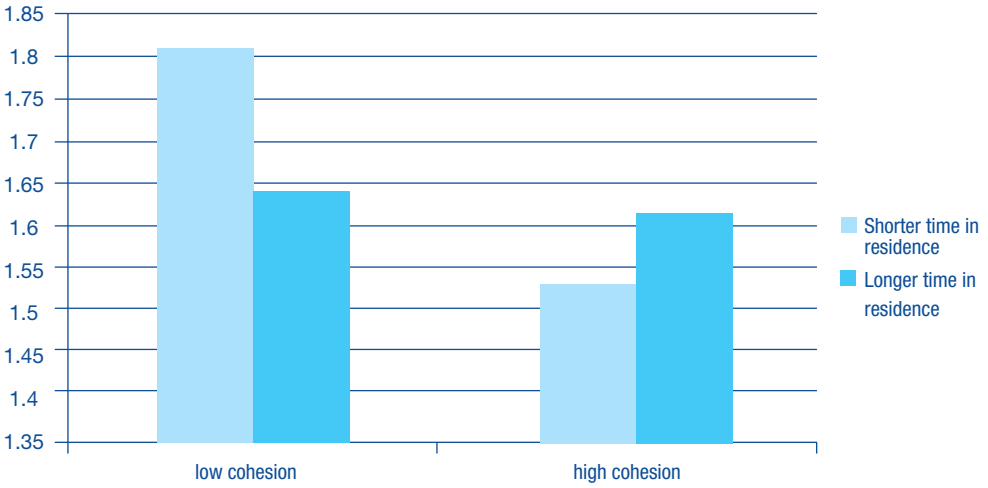


Figure 16. Interaction between social cohesion and time in residence on loneliness.



Section summary

- Social cohesion was predictive of greater physical and mental health, and social networks/support.
- Psychological distress was higher amongst those living in an area perceived to be low in social cohesion if they did not have a partner.
- Neighbourhood social cohesion also interacted with retirement status and time in residence in its association with loneliness. Low cohesion was associated with higher loneliness than high cohesion but this effect was most pronounced for part-retirees and those who had only been in the neighbourhood for a short time.

Discussion and Conclusions

The strategy also refers to the need for removing barriers which may restrict access to community participation for older adults. The present report contributes to our understanding of the relationship between neighbourhood characteristics and well-being outcomes; highlighting that the neighbourhood environment might play a role in either enhancing or restricting opportunities for older adults to remain healthy, socially engaged and active (Richard et al., 2008). Consistent with previous research (e.g. Bowling & Stafford, 2007; Brown et al., 2009; Stafford, Gimeno, & Marmot, 2008), the report provides evidence that neighbourhood characteristics are consistently associated with important facets of later life well-being across domains of general health, mental health, and social networks/isolation.

From the correlational analyses, it was apparent that perceptions of physical disorder in the neighbourhood environment were most consistently related to general health. Although the sizes of the associations were relatively small, this does provide some evidence to suggest that negative perceptions of the physical environment may be a barrier to good health. This may be a result of such perceptions resulting in restricted activity engagement outside of the home (Beard et al., 2009; Bowling, Barber, Morris, & Ebrahim, 2006; Rantakokko et al., 2009; Richard et al., 2008). These negative perceptions of neighbourhood characteristics were also associated with anxiety (consistent with Ross & Mirowski, 2009) and therefore may further influence health through stress and reduced immune functioning (Segerstrom & Miller, 2004). Given the association between physical characteristics of the neighbourhood environment and health, it seems a poor neighbourhood environment (i.e. one with high levels of vandalism and rubbish, many empty buildings, and where safety at night is a concern) could also serve as a barrier to active ageing and the retention of physical functioning and independence (Bowling, 2008).

In contrast to the physical elements of the neighbourhood, perceptions of social cohesion in the neighbourhood were consistently related to the different indices of ageing well. All social cohesion items were associated with lower depression, stress, and anxiety, suggesting that neighbourhood support provides an important element of broader social support resources, which assist older adults to cope with troubles and stressors (Bowling & Stafford, 2007). Furthermore, neighbourhood cohesion was a significant predictor of total social network size and interacted with retirement status and time in residence to predict loneliness. These findings highlight the role of neighbourhood social networks in contributing to overall social networks and access to social capital and support (Bowling et al., 2006). As noted by Brown et al. (2009), neighbours may be a particularly important source of support for older adults who are likely to spend high proportions of time within their neighbourhood area. Higher levels of social cohesion may contribute to greater emotional and/or instrumental social support, which in turn can also facilitate older adults' ageing in place (Brown et al., 2009). For example, interviews with older adults have suggested such neighbourly support contributes to overall quality of life, and that neighbours provide important reassurance and a sense of security for those living alone, while also providing opportunities for the exchange of practical help (Gabriel & Bowling, 2004; Walker & Hiller, 2007). Such help (i.e. providing transport to medical appointments or assisting with regular tasks such as grocery shopping) can be particularly important for older adults who may be of poor health, are unable to drive, or do not have family living in close proximity. For this group in particular, neighbourhood social cohesion could make a difference in terms of their capacity to continue living independently. Reducing, delaying, and/or eliminating the need for formal support or institutionalisation is beneficial for these individuals and can also reduce health and aged care expenditure (Andrews, 2001; Clarke & Nieuwenhuijsen, 2009).

To summarise, the findings of this report support the importance of positive perceptions of the neighbourhood environment for health, well-being, and quality of life for community residing older adults (Yen, Michael, & Perdue, 2009). The results suggest a generally high level of satisfaction with aspects of the neighbourhood environment for this sample of older adults, and that those with the highest levels of perceived social cohesion and a lack of perceived physical disorder also, on average, have higher levels of physical and mental health, and social support resources. Although consistent with previous research, a clear need exists for future work within the Australian context to examine associations of neighbourhood characteristics with other consequential outcomes for ageing well in national samples, across a broader range of outcome variables (i.e. including biological outcomes), and over repeated assessments, thereby enabling investigation of longitudinal changes. Longitudinal studies could also help to shed light on the causal direction of relationships between neighbourhood quality and wellbeing outcomes (i.e. do good neighbourhoods promote ageing well, or do people ageing well tend to be more likely to view their neighbourhood positively?). Further research is also needed to determine whether associations between neighbourhood cohesion and ageing well are the indirect result of other unmeasured characteristics (e.g. personality characteristics of individuals promoting both adaptive health behaviours and positive social relationships).

Despite these caveats, consideration of the present findings in the context of other emerging evidence in the area suggests that policy measures aimed at enhancing the quality of neighbourhood environments may contribute in a positive way to broader strategies concerned with assisting older Australians to age well in place (Schofield, Davey, Keeling, & Parsons, 2006). Additionally, identifying individuals residing in environments with multiple negative neighbourhood characteristics could help in targeting those at risk of poor outcomes, or who may be in greater need of services and support. Our findings highlight the need for policy and public health initiatives to recognise the capacity for both individual characteristics (e.g. physical and cognitive health) and the quality of the social and physical environment to shape health, independence and happiness into later life.

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