



## Evidence that loneliness can be reduced by a whole-of-community intervention to increase neighbourhood identification

Polly Fong<sup>a</sup>, Tegan Cruwys<sup>b,\*</sup>, Sam L. Robinson<sup>c</sup>, S. Alexander Haslam<sup>a</sup>, Catherine Haslam<sup>a</sup>, Paula L. Mance<sup>c</sup>, Claire L. Fisher<sup>c</sup>

<sup>a</sup> School of Psychology, University of Queensland, St Lucia, 4067, Australia

<sup>b</sup> Research School of Psychology, The Australian National University, Canberra, ACT, 2601, Australia

<sup>c</sup> Relationships Australia National, Canberra, ACT, 2604, Australia

### ARTICLE INFO

#### Keywords:

Loneliness  
Place identity  
Social connectedness  
Mental health  
social cohesion  
well-being  
social identity

### ABSTRACT

**Rationale:** Social identification with the people in one's neighbourhood has a wide variety of benefits for individual and community health and wellbeing. In particular, previous research shows that residents' social identification with their neighbourhood is protective of mental health. However, researchers are only just beginning to design and evaluate interventions that directly target social identification on health grounds.

**Objective:** This longitudinal study evaluated a whole-of-community intervention at scale (Neighbour Day, 2019), in which Australian residents were encouraged to build social connections in their local community. Neighbour Day is a campaign that seeks to raise public awareness of the importance of connecting with neighbours and had a reach of approximately 300,000 people in 2019.

**Methods:** Participants were 437 hosts of neighbourhood events held across 276 diverse suburbs across Australia. Participants were surveyed at three-time points; before and after Neighbour Day, as well as at six-month follow up.

**Results:** Hosting a Neighbour Day event led to a significant increase in neighbourhood social identification, which was sustained six months later. This increase in social identification predicted increased social cohesion, reduced loneliness and improved wellbeing.

**Conclusions:** This study provides evidence that neighbourhood identification is an effective target mechanism to curb loneliness and social fragmentation in the community. Implications are discussed with a focus on how social identity-building interventions can be effectively implemented in community settings to benefit public health.

### 1. Introduction

Loneliness is a recognized public health concern, due to its robust detrimental effect on health and longevity (Elovainio et al., 2017; Hawkey and Cacioppo, 2010; Holt-Lunstad et al., 2017). Observational studies have identified a particularly close association between loneliness and mental health (Leigh-Hunt et al., 2017; Wang et al., 2018). Numerous factors are also known to contribute to loneliness — including having few confidants, little contact with family or friends, being in poor physical health, having limited financial means, belonging to a marginalized group, living with a disability, and genetic predisposition (Bartels et al., 2008; Cacioppo and Cacioppo, 2012; Golden et al., 2009; Klinenberg, 2016; MacDonald et al., 2018). Less clear is how to manage this problem at scale. On this point, there is growing recognition that

intervention is likely to be more successful where it draws on resources within people's local communities and neighbourhoods.

Where a person lives matters to their health and wellbeing, and there is a large body of research that confirms the importance of a neighbourhood's social environment for mental health and wellbeing outcomes (e.g., Mair et al., 2008; Stafford et al., 2008; Ziersch, 2005). In particular, research suggests that a neighbourhood's social infrastructure (e.g., community and green spaces) may help to facilitate social interactions between residents which reduce loneliness (Finlay et al., 2019; van den Berg et al., 2016) and that perceptions of neighbourhood environment quality can also impact residents' sense of loneliness (Domenech-Abella et al., 2020; Kearns et al., 2015). For example, Kearns et al. (2015) found that residents reported fewer symptoms of loneliness if they perceived their neighbourhood environment to be of higher

\* Corresponding author.

E-mail address: [Tegan.Cruwys@anu.edu.au](mailto:Tegan.Cruwys@anu.edu.au) (T. Cruwys).

<https://doi.org/10.1016/j.socscimed.2021.113909>

Received in revised form 28 January 2021; Accepted 2 April 2021

Available online 6 April 2021

0277-9536/© 2021 Elsevier Ltd. All rights reserved.

quality and if they frequented local amenities more. In contrast, cues to neighbourhood 'disorder' (e.g., the perceived presence of vandalism, graffiti, litter) commonly associated with disadvantaged areas, may engender feelings of mistrust and reduce residents' willingness to engage socially (Ross and Jang, 2000; Sampson et al., 1997). Together, these findings suggest that loneliness is not simply an individual-level problem, but is embedded within, and shaped by, the broader socio-structural context.

Hitherto, neighbourhood interventions have been developed to combat loneliness using community-based and/or place-based approaches. Community-based interventions foster social connections through community-development and have shown promising results. These tend to target older adults (e.g., Ehsan et al., 2020; Gardiner et al., 2018), or faith, interest or vulnerable groups (e.g., Cox et al., 2014; Crossley et al., 2001; van Olphen et al., 2003). Community- and/or place-based interventions may also involve making changes to a neighbourhood's built environment. This type of hybrid intervention approach engages with local residents around ways to improve public spaces to help facilitate social engagement (Pendola and Gen, 2008; Teig et al., 2009). Other initiatives have also sought to emphasize inclusion and community-empowerment through technology and social media (Smith et al., 2010). Research suggests that when social media is used to enhance existing or form new social connections, it can reduce loneliness and improve wellbeing (Kim, 2018; Nowland et al., 2018). Geographically-based social media platforms that seek to connect people who are located close by may also help to increase individual wellbeing and collective efficacy (Hampton, 2003; Masden et al., 2014).

Most other interventions that seek to reduce loneliness have been conducted in small group therapeutic settings with older adults. These have been found to have mixed effectiveness (e.g., Gardiner et al., 2018; Masi et al., 2011). In part, this is because the intervention mechanisms that serve to reduce loneliness are not well understood (Courtin and Knapp, 2017; O'Rourke et al., 2018). In this context, it is also notable that relatively few interventions have used large-scale public campaigns open to the whole-of-community at the grassroots level to engage neighbourhood communities. Nevertheless, research has generally highlighted the health benefits of local ties and relationships that flow from the practice of 'neighbouring' (Greenfield and Reyes, 2014; Kearns et al., 2015; Walton, 2018). This link between neighbouring practices and health has been examined by researchers in various fields (e.g., public health, social epidemiology, community psychology, environmental psychology). Together, this body of literature suggests that support and interactions between residents imbue a sense of *place identity*, *community*, *belonging*, *social connectedness*, and *social cohesion* in the neighbourhood.

So how might we integrate these observations theoretically? And, more specifically, how might we translate them into large-scale intervention? These are key questions that the present paper seeks to address. One theoretical approach that can draw together these interrelated concepts and explain their impact on health and wellbeing is derived from the large corpus of work informed by social identity theorizing (after Tajfel and Turner, 1979). This approach argues that the health benefits of efforts to build local place-based ties derive primarily from the capacity for these to contribute to the development of a sense of shared (place- or neighbourhood-based) *social identity* (a sense of 'us-ness'; Haslam et al., 2018). In what follows, we draw on this approach to test at scale the utility of a neighbourhood intervention that seeks to deliver health benefits — in particular, wellbeing — by building a sense of shared neighbourhood social identity.

Neighbouring — a term used to characterize social connections and interactions between locals and residents — can take various forms. It might involve passive contact, civic participation, information sharing, reciprocity, or exchange of favours (Campbell and Lee, 1990; Kusenbach, 2006). Studies show that neighbouring is a vehicle to access tangible forms of instrumental and pragmatic support, which are important for reducing loneliness and thus for wellbeing, particularly for

those living in disadvantaged neighbourhoods (Kearns et al., 2015; Miao et al., 2019). Nevertheless, research suggests that it is the less tangible, psychological aspects of neighbouring — those of connectedness, cohesion, and a sense of community — that are especially important in reducing loneliness and supporting health (Gordeev and Egan, 2015; Mahmoudi Farahani, 2016; Pretty et al., 2007; Prezza et al., 2001; Unger and Wandersman, 1985). At the same time, though, previous studies tend to be cross-sectional and do not allow for rigorous examination of cause and effect, or of the processes through which these aspects of neighbouring affect health and wellbeing (Talo et al., 2014). Equally problematic is the absence of theorizing that might explain the mechanisms through which neighbouring exerts its effects. As intimated above, the present research addresses these gaps by (a) drawing on research in the social identity tradition to suggest that neighbourhood identification might be a key driver of the benefits of neighbouring, and then (b) targeting this mechanism in a whole-of-community intervention to determine its power to improve outcomes. Specifically, the study uses a prospective design to evaluate a nationwide intervention that seeks to increase peoples' sense of neighbourhood identity and thereby leading to benefits both for individuals (reduced loneliness, improved wellbeing) and the community (social cohesion).

### 1.1. Disconnected neighbourhoods

Research shows that loneliness is prevalent in contemporary neighbourhoods, particularly disadvantaged ones (Kearns et al., 2015; Tigges et al., 1998). Recent figures show that people have less time to socialize with neighbours due to longer working hours and longer commute times (Chatterjee et al., 2019; Weston et al., 2019). Relatedly, whereas three decades ago women in households tended to engage in neighbouring activities, this has reduced in recent years due to lack of time particularly in Western countries (Campbell and Lee, 1990; Weston et al., 2019). Similarly, trends also indicate that rates of volunteering, religious participation, and average network size have all decreased, and that a growing number of people have few contacts with whom they can discuss personal matters (Cooperman et al., 2015; Grimm and Dietz, 2018; McPherson et al., 2005).

Apart from the changing work and lifestyle patterns that might be impacting neighbourhood connectedness, neighbourhoods have also witnessed increasing ethnic diversity (Zwiers et al., 2018). For instance, between 1980 and 2010, the number of US zipcodes that comprised a predominant 'White' majority has dropped from 90% to 33% (Lee et al., 2014). This pattern of greater ethnic diversity in neighbourhoods is now observed across Western cities (Forrest and Dunn, 2010; Kearns and Whitley, 2018). Researchers have proposed that diversity tends to diminish social cohesion (Putnam, 2007). Furthermore, research shows that disputes between neighbours have risen, particularly in gentrifying neighbourhoods which have mixed-income residents, and that authorities have increasingly needed to act as mediators of these disputes (Cheshire et al., 2018). These various findings point to ways that structural changes within neighbourhoods over time can threaten a sense of community. They also highlight the challenges that neighbours have increasingly experienced as they seek to resolve problems cooperatively (Cheshire et al., 2018). In particular, it is apparent that residents today often feel they have less in common with each other than they did in the past, and this undermines social cohesion.

Previous studies have shown that informal neighbourhood networks can have a positive impact on individual and community outcomes (Bolland and McCallum, 2002; Kearns et al., 2015; Zahnaw and Tsai, 2019). For example, one study found that a sense of community predicted whether public housing residents would engage collectively with neighbours to tackle neighbourhood problems (Bolland and McCallum, 2002). The adverse effects that stigma and discrimination, based on where a person lives, have on health outcomes are well known (Gonzales et al., 2017; Kelaher et al., 2010). Studies have shown that positive contact, social connectedness, and shared place-based identity between

locals can overcome the adverse effects of neighbourhood diversity and disadvantage (Fong et al., 2019a; 2019b; Stevenson et al., 2019; 2020). Moreover, research shows that a shared sense of belonging associated with a place-based identity is beneficial for both individual wellbeing and social cohesion (Kusenbach, 2008; Sturgis et al., 2010; Unger and Wandersman, 1985; Wilkinson, 2007). For instance, Sturgis and colleagues (2010) found that although ethnic diversity across British neighbourhoods was associated with lower social cohesion, this association was weaker among those who felt socially connected to their neighbours. Together, these findings suggest that a common place-based identity can support neighbourhood social cohesion.

However, relying on neighbourhood residents to organically connect has its challenges. People who live close, such as in urban areas, habitually ignore one another as ‘familiar strangers’; treating them as they would commuters on public transport (Milgram, 1972). Yet as one experimental study showed, simply assigning people on trains and buses to engage in conversation with a fellow commuter helped to create a social connection that benefited commuter wellbeing (Epley and Schroeder, 2014). Extending this to the neighbourhood context, one might ask whether a similar intervention might increase community connectedness in ways that support wellbeing? To answer this question, we must first consider the psychological mechanism through which residents, who might otherwise be strangers, come to feel socially connected. Drawing on social identity theorizing, we propose that it is through the development of a shared, place-based, *neighbourhood identity*, that neighbourhood life can improve social cohesion and reduce loneliness, with consequent benefits for wellbeing.

### 1.2. A social identity analysis of neighbourhood context

The social identity approach is an influential psychological framework that explains when and how people come to form psychological bonds with others as members of a common ingroup (Tajfel, 1978; Turner, 1981). Fundamental to this approach is the idea that people’s self-definition — and the cognition, emotion, and behaviour that flows from this — is derived in part from their membership in social groups: their social identity. When a person identifies with a particular social group, they come to think of themselves, not in terms of “I” and “me”, but rather as “us” and “we”. In the residential neighbourhood context, these group- and place-based self-definitions can be reflected in a collective sense of “us commuters,” or as “we Brixton residents.” When these social identities are salient, they then structure a person’s thinking, feelings, and actions in ways that align them with the collective perspective of the group (Turner et al., 1987).

Social identification is the basis for a range of psychological resources that are of interest in the present research: namely social cohesion, social support, trust, and helping behaviour (Cruwys et al., 2021; Levine et al., 2005). In particular, research informed by the social identity approach to health (after Haslam et al., 2018; Haslam et al., 2009; Jetten et al., 2012) predicts that neighbourhood identification is the “active ingredient” that underpins the benefits of neighbouring seen in previous research: reduced loneliness, improved social cohesion, and wellbeing. Evidence supporting these predictions is provided by a series of high-quality panel studies that have investigated the link between neighbourhood identification and mental health using multilevel modelling on population data. For example, one study found that neighbourhood identification in a large sample of UK residents ( $N = 4319$ ) was associated with fewer depressive symptoms (McIntyre et al., 2018). Another study with a representative sample of Australian residents ( $N = 14,874$ ) found that neighbourhood identification protected mental health (Fong et al., 2019a), while a follow-up longitudinal study ( $N = 8376$ ) revealed that the degree to which residents had an *increased* sense of neighbourhood identification over time attenuated the negative impact of neighbourhood change on their mental health (Fong et al., 2019b). Finally, Heath et al. (2017) found that neighbourhood identification provided a basis for self-efficacy, collective-esteem, and access

to social support, which in turn enhanced the wellbeing of residents in communities undergoing urban regeneration (Heath et al., 2017). Other studies also show that a sense of community identification (with one’s residential neighbourhood) is negatively associated with feelings of loneliness (Prezza et al., 2001), and positively associated both with wellbeing and with higher perceived neighbourhood cohesion (Wilkinson, 2007; Yetim and Yetim, 2014).

Yet despite these promising findings, there is still no evidence for any interventions which target the building and strengthening of neighbourhood identification. Studies on neighbouring and social participation show benefits such as increased sense of community, but these have not measured neighbourhood identification (Berg-Warman and Brodsky, 2006; Greenfield et al., 2015; Farrell et al., 2004).

Beyond the neighbourhood context, evidence suggests that interventions to increase social identification tend to improve health and wellbeing in wider settings among sports teams, special interest groups, and aged care residents (Gleibs et al., 2011; Koni et al., 2019; Scarf et al., 2016). Social identity interventions have also proved useful in enhancing other outcomes among vulnerable and stigmatized groups, such as collective action, community participation, and collective efficacy (Ball et al., 2014; Rees and Bamberg, 2014; van Zomeren et al., 2008). Although health was not a study outcome, Rees and Bamberg (2014) showed that intention to take part in a neighbourhood-based initiative for climate action was predicted by neighbourhood identification. Recent meta-analytic data also showed that interventions with the capacity to build social identification have a moderate to strong effect on health and wellbeing (Steffens et al., 2019). Again, though, these social identity building interventions have not been applied at *scale*, and typically only involve members of vulnerable groups (e.g., people with depression, or experiencing homelessness; Steffens et al., 2019). A manualized social identity intervention (Groups 4 Health) has been shown to reduce loneliness and associated psychological distress but is not well suited to this task because it requires 7 hours of facilitated content in small groups (Haslam et al., 2016, 2019).

To sum up the current state of the evidence, prior research provides support for an association between neighbourhood identification, reduced loneliness, higher social cohesion, and wellbeing. However, the correlational nature of these data means that the nature of these relationships is unclear (e.g., Heath et al., 2017; Prezza et al., 2001). It is plausible, for example, that residents who experience higher wellbeing are more likely to engage with neighbours, to feel less lonely and thus, experience higher levels of social cohesion. While evidence from social identity interventions provides greater confidence in the direction of these relationships, none of these studies have been conducted in the context of neighbourhoods or examined the role of neighbourhood identity specifically. The present research seeks to fill this gap by evaluating the effectiveness of a community-based intervention designed to increase neighbourhood identification and thereby improve key individual and community outcomes.

### 1.3. The present study

This study is the first to evaluate a whole-of-community intervention designed to increase a person’s social identification with their neighbourhood. The intervention targeted neighbourhood identification with a view to reduce loneliness and improve social cohesion and wellbeing. It involved a nationwide campaign called Neighbour Day, promoted by the community-based not-for-profit organisation Relationships Australia. As part of this campaign, residents across Australia are encouraged to connect with others in their neighbourhood on one particular day of the year (the last Sunday of March). It promotes the event via local newspapers, notices in community spaces, national and social media, and on Relationships Australia’s website. In addition to raising awareness of Neighbour Day, Relationships Australia also helps individuals and community groups to host events by providing a variety of resources on their website (e.g., downloadable posters, invitations,

cards). The website also offers practical information on how to plan and host a Neighbour Day event. In-house calculations conducted by Relationships Australia conservatively estimated that 290,608 people took part in Neighbour Day in 2019.

The specific activities held on Neighbour Day are varied and include: hosting social gathering of neighbours at home or in a communal space (e.g., a driveway, a park, a street party, a community centre), leaving cards in neighbours' letterboxes on ways to connect, checking in on vulnerable and/or elderly neighbours, playing community-based games, community meetings, and engaging with the community via social media. These events can involve both small-scale activities (e.g., to promote neighbourly relationships) and large-scale gatherings of over 500 people by community organizations. These events seek to create an opportunity for residents to get together with neighbours, old and new, and to make introductions or reacquaint themselves with one another. Virtual methods of connecting also align well with the aims of the campaign, with research showing that social media (e.g., a Street Facebook page) is a good starting point for neighbourhood engagement (Johnson and Halegoua, 2015).

We used a prospective three time-point longitudinal survey design, with time-point 1 (T1) in the month leading up to Neighbour Day (March 31, 2019), time-point 2 (T2) in the month immediately following Neighbour Day, and time-point 3 (T3) approximately six months after T2. The primary goal was to evaluate whether taking part in Neighbour Day led to enhanced neighbourhood identification and whether this was sustained at a six-month follow-up. We further predicted that, to the extent that engaging in Neighbour Day led to increased neighbourhood identification, it would, in turn, reduce loneliness and increase perceptions of neighbourhood social cohesiveness. Finally, we tested whether increased neighbourhood identification, loneliness, and social cohesion (at T2) were associated with wellbeing at the six-month follow-up. These effects were further examined when controlling for individual attributes as covariates — notably, age, sex, neighbourhood socioeconomic status, and education that can affect loneliness and social cohesion (Dahlberg et al., 2015; Elovainio et al., 2017; Erdem et al., 2015; Feinstein et al., 2006).

Based on social identity theorizing and research (as set out above), our hypotheses were as follows:

H1: Following Neighbour Day, participants' sense of neighbourhood identification will be higher at T2 (H1a) and T3 (H1b) than at T1.

H2: Neighbourhood identification at T2 will negatively predict change in loneliness at T2 (H2a) and positively predict change in social cohesion at T2 (H2b).

H3: Increased neighbourhood identification at T2 will positively predict participants' wellbeing at T3.

H4: The relationship between neighbourhood identification at T2 and wellbeing at T3 will be mediated via loneliness (H4a) and social cohesion (H4b) at T2.

H5: The above effects will remain significant after controlling for baseline levels of the independent and dependent variables measured at T1 and after accounting for other known predictors of neighbourhood identification (i.e., age, sex, education, and neighbourhood socioeconomic status).

## 2. Methods

### 2.1. Participants and design

Participants were all invited to take part in the nationwide pre-event survey (T1) via e-newsletter, social media, and on the Relationships Australia Neighbour Day website, which visitors typically visit to access resources when planning to host, participate in events, or take action on Neighbour Day. Previous hosts of Neighbour Day events also received an invitation via an email mailing list. Respondents at T1 were asked to provide their email contact, which was used to invite participants to subsequent surveys. By way of framing, participants read that the

research team wanted to learn more about their thoughts before and experiences after having participated in Neighbour Day. Participants were also informed that their responses could be used to help the research team assess the impact of Neighbour Day on the community and to improve the initiative in the future. They were offered incentives at each time-point. Participation in all surveys was voluntary and ethical approval was obtained from the Australian National University (#2019/132).

### 2.2. Measures

**Demographics.** Participants indicated their sex, their age group (18–29; 30 to 39; 40 to 49; 50 to 59; 60 to 69; and 70+), their educational attainment (coded 1 = *less than Year 12 or end of secondary schooling*, to 6 = *completed a post-graduate degree*), and residential postcode. Neighbourhood socioeconomic status (NSES) was calculated from participants' postcodes using aggregated data provided by the Australian Bureau of Statistics (ABS). This measure indexes a neighbourhood's relative level of advantage/disadvantage (SEIFA, 2016) on a 10-point scale (1 = *least advantaged*, 10 = *most advantaged*).

Participants were asked to rate on the following measures using a 7-point Likert scale, where 1 = *strongly disagree* and 7 = *strongly agree*.

**Neighbourhood identification** ( $\alpha_{T1} = 0.88$ ;  $\alpha_{T2} = 0.91$ ;  $\alpha_{T3} = 0.89$ ). A four-item scale asked participants the extent to which they agreed with statements such as '*I identify with the residents in this neighbourhood.*' This scale has been used in previous studies to reliably measure social identification in various group contexts (Doosje et al., 1995; Haslam et al., 2018).

**Loneliness.** Participants were asked to rate the extent to which they agreed with the statement '*I often feel very lonely.*' This single item measure has been used to reliably index feelings of emotional loneliness in the general population (Baker, 2012; Butterworth and Crosier, 2004).

**Social cohesion** ( $\alpha_{T1} = 0.78$ ;  $\alpha_{T2} = 0.81$ ). This five-item scale measured the extent to which participants agreed with three positively worded statements (e.g., *people in this neighbourhood can be trusted*), and two negatively worded statements (e.g., *people in this neighbourhood do not get along with each other*). The latter were reversed scored before the five items were averaged (Barber et al., 2016; Sampson et al., 1997).

**Wellbeing Index** ( $\alpha_{T3} = 0.91$ ). The five-item World Health Organisation Wellbeing Index (WHO-5, e.g., *I have felt cheerful in good spirits*; Heun et al., 2001) was used to assess subjective quality of life, based on positive mood, vitality, and general interest, with higher scores indicating better wellbeing. This measure was included in the T3 survey only.

## 3. Results

The sample comprised 437 participants at T1, of whom 207 were retained at T2 and 196 were retained at T3. Descriptive statistics and correlations are provided in Table 1. Most participants were female (82.8%), and the largest age group represented was the 30–39 year group (25.8%) but the sample was diverse in education level and neighbourhood socioeconomic status. Almost half (49.2%) of the sample had not completed a university degree. The neighbourhood suburbs represented in the sample comprised 276 from all states and territories of Australia; see Fig. 1 for participants' locations across Australia. The majority of participants were from unique postcodes (74.5% at T1; 82.7% at T2; 84.8% at T3; see Table I in supplementary materials for full details). The percentage of respondents living in the most disadvantaged areas (deciles 1–3) was 19.7%, while 34.5% resided in the most advantaged areas (deciles 8–10). The remainder, 42.6% (deciles 4–7), lived in a neighbourhood of average NSES. The distribution was very similar across the three time-points suggesting that, although advantaged respondents were slightly overrepresented, a diverse sample from the most to the least advantaged neighbourhoods was surveyed at each time-point. Table II in the supplementary materials reports indicators of neighbourhood cultural diversity across time-points.

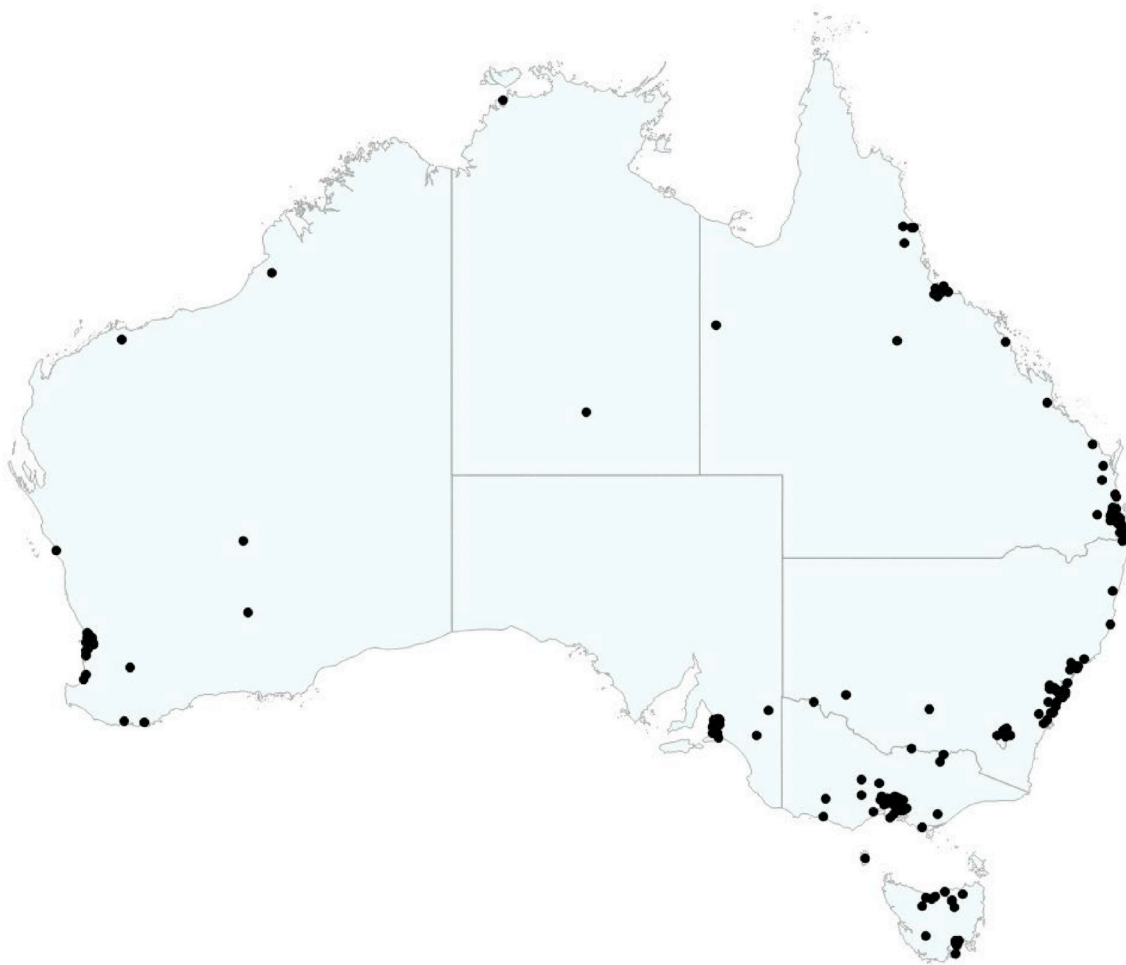
**Table 1**  
Zero-order correlations.

Variable (range)	M (SD)	2	3	4	5	6	7	8	9	10	11	12
1. Sex (0 = male; 1 = female; 2 = other)		.02	-.02	-.07	.03	.02	.06	.14*	.04	.13	.14	.12
2. Age (1–6) <sup>a</sup>	3.19 (1.30)	1	.07	-.10*	.01	-.07	.02	.05	-.13	.15*	.13	.13
3. Neighbourhood SES (1–10)	6.19 (2.65)		1	.17**	.05	-.04	.11*	.04	-.03	.18**	-.02	-.01
4. Education (1–6)	4.04 (1.53)			1	-.05	-.02	.01	-.05	-.11	.07	-.14	-.06
5. T1 Neighbourhood identification (1–7)	5.49 (1.24)				1	-.44**	.67**	.77**	-.29**	.67**	.72**	.34**
6. T1 Loneliness (1–7)	2.82 (1.69)					1	-.35**	-.35**	.62**	-.39**	-.33**	-.27**
7. T1 Social cohesion (1–7)	5.06 (1.10)						1	.58**	-.22**	.81**	.60**	.28**
8. T2 Neighbourhood identification (1–7)	5.71 (1.10)							1	-.33**	.60**	.75**	.37**
9. T2 Loneliness (1–7)	3.07 (1.75)								1	-.29**	-.29**	-.39**
10. T2 Social cohesion (1–7)	5.04 (1.03)									1	.55**	.29**
11. T3 Neighbourhood identification (1–7)	5.70 (1.0.7)										1	.39**
12. T3 Wellbeing (1–7)	4.22 (1.02)											1

\**p* < .05.

\*\**p* < .01.

<sup>a</sup> Age Groups: 1 = 18 to 29; 2 = 30 to 39; 3 = 40 to 49; 4 = 50 to 59; 5 = 60 to 69; and 6 = 70+.



**Fig. 1.** Postcode locations of Neighbour Day 2019 participants across Australia.

To explore the impact of systematic attrition, independent sample *t*-tests were performed on the independent and dependent variables at T1, first comparing those participants who were retained at T2 to those who were not, and then those participants who were retained at T3 to those who were not. These analyses revealed that participants who participated at both T1 and T2 were not significantly different on measures of neighbourhood identification and social cohesion at T1 from those who only completed the survey at T1 (*ps* = .609 to .861). Yet, participants who felt more lonely at T1 (*M* = 3.04, *SD* = 1.69) were significantly *more*

likely to complete the survey at T2 (*t* (202) = -2.69, *p* = .007) than those who only completed at T1 (*M* = 2.61, *SD* = 1.66). Those who participated in both T1 and T3 surveys did not differ significantly on their T1 measures of loneliness, social cohesion, and neighbourhood identification from those who only completed the survey at T1 (*ps* = .291 to .420). Little's MCAR test indicated that missing values were missing completely at random,  $\chi^2$  (90, *N* = 437) = 88.08, *p* = .538. Nevertheless, to manage missing data, the hypotheses were assessed in two ways: first with the subsample of people who responded at all three time-points (*N*

= 139), and second using full information maximization likelihood (FIML), which is a recommended method for handling attrition that utilizes all the available data at each time-point in the model (Dong and Peng, 2013).

### 3.1. H1: Neighbour Day participation predicts increased neighbourhood identification

To assess H1, two pairwise *t*-tests were conducted on ratings of neighbourhood identification comparing T1 ( $M = 5.55$ ;  $SD = 1.24$ ) and T2 data ( $M = 5.78$ ;  $SD = 1.00$ ),  $t(136) = -3.32$ ,  $p < .001$ , Cohen's  $d = 0.28$  and T1 and T3 data ( $M = 5.74$ ;  $SD = 1.01$ ),  $t(137) = -2.48$ ,  $p < .014$ , Cohen's  $d = 0.21$ . Supporting H1a and H1b, neighbourhood identification was higher following participation in Neighbour Day (T2), and this increase was sustained six months later (T3), see Fig. 2. Model comparisons were replicated using FIML, confirming a significant increase in neighbourhood identification between T1 and T2 (Wald's test = 4.31,  $p = .038$ ), and between T1 and T3 (Wald's test = 6.61,  $p = .010$ ).

### 3.2. H2: neighbourhood identification reduces loneliness and increases social cohesion

Linear mixed-effects modelling (see Table 2a) was conducted to test H2a (the effect of change in neighbourhood identification on T2 loneliness). Model 1 included participants' postcode as a grouping variable. Model 2 included baseline measures of neighbourhood identification ( $p = .617$ ) and loneliness ( $\beta = 0.63$ ,  $p < .001$ ) at T1. Critical to the test of H2a, Model 3 included neighbourhood identification at T2 ( $\beta = -0.35$ ,  $p = .009$ ). Model 4 included the covariates age, sex, education, and neighbourhood socioeconomic status, in which neighbourhood identification at T2 remained significant. Supporting H2a, the greater the increase in a person's neighbourhood identification following Neighbour Day, the larger their reduction in loneliness at T2.

A second series of mixed-effects models (Table 2b) were conducted to test H2b (the effect of change in neighbourhood identification on T2 social cohesion). Model 1 included participants' postcode as a grouping variable. Model 2 included baseline measures of neighbourhood identification ( $\beta = 0.14$ ,  $p < .004$ ) and social cohesion ( $\beta = 0.62$ ,  $p < .001$ ) at T1. Testing H2b, Model 3 included neighbourhood identification at T2 ( $\beta = 0.16$ ,  $p = .005$ ). Model 4 included the covariates age, sex, education, and neighbourhood socioeconomic status, in which neighbourhood identification at T2 remained significant. Supporting H2b, the greater the increase in a person's neighbourhood identification following Neighbour Day, the higher their social cohesion at T2.

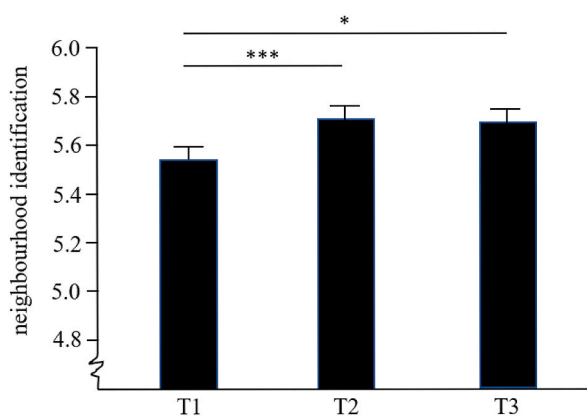


Fig. 2. Neighbourhood identification across time-points, at baseline (T1), within a month (T2) and six months (T3) after the intervention. Notes: Error bars (95% confidence intervals). \* $p < .05$ , \*\*\* $p < .001$ .

### 3.3. H3 and H4: Neighbourhood identification supports wellbeing through reducing loneliness and increasing social cohesion

A structural equation model using FIML was conducted to test both the direct effect of neighbourhood identification at T2 on wellbeing at T3 (H3) and the hypothesized indirect pathways via loneliness at T2 (H4a) and social cohesion at T2 (H4b). This approach enabled us to simultaneously examine the relationship between the independent variable, the two mediators, and the dependent variable while controlling for their respective baseline measures at T1. This also replicated the test of H2 using a FIML approach. The model is presented in Fig. 3.

Here, increased neighbourhood identification at T2 predicted reduced loneliness at T2 ( $\beta = -0.12$ ,  $p = .042$ ; further supporting H2a) and, in turn, reduced loneliness at T2 predicted wellbeing at T3 ( $\beta = -0.31$ ,  $p < .001$ , consistent with H4a). Supporting H3, increased neighbourhood identification at T2 predicted wellbeing at T3 ( $\beta = 0.24$ ,  $p = .015$ ). Providing weak support for H4a, there was some evidence of mediation between neighbourhood identification and wellbeing via reduced loneliness (indirect effect  $\gamma = 0.04$ ,  $p = .067$ ). While increased neighbourhood identification predicted increased social cohesion at T2 ( $\beta = 0.19$ ,  $p < .001$ ; further supporting H2b), social cohesion at T2 did not predict wellbeing at T3 ( $p = .507$ ). Accordingly, H4b was not supported. Overall model fit was very good ( $\chi^2 = 10.57$ ,  $df = 10$ ,  $p = .393$ , CFI = 0.99, TLI = 0.99, RMSEA = 0.015, SRMR = 0.021, AIC = 2041.06) and explained 23.6% ( $R^2 = 0.24$ ,  $p < .001$ ) of the variance on wellbeing at T3. Taken together, SEM supported all our hypotheses except H4.

### 3.4. H5: Controlling for covariates and baselines

Supporting H5, after controlling for sociodemographic variables and T1 baselines, results of the two mixed-effects linear models and the structural equation model remained unchanged. Including the covariates, the SEM explained an additional 1.3% of the variance on wellbeing at T3 ( $\chi^2 = 25.76$ ,  $df = 22$ ,  $p = .262$ , CFI = 0.99, TLI = 0.99, RMSEA = 0.026, SRMR = 0.026, AIC = 2008.22).

The supplementary materials present the results of additional analyses and further alternative model testing to assess the influence of neighbourhood cultural diversity as a covariate or moderator. These analyses generated no additional insights.

## 4. Discussion

This study provides the first evidence of the benefits that flow from a whole-of-community campaign that sought to reduce loneliness by targeting neighbourhood social identification. More specifically, our results show that participation in Neighbour Day led to increased neighbourhood identification that was sustained six months later. This, in turn, had the effect of reducing loneliness and increasing social cohesion, after controlling for baseline levels of all three variables. We found that increased neighbourhood identification at T2 also positively predicted wellbeing at T3. Moreover, there was evidence that increased neighbourhood identification predicted reduced loneliness and, which in turn, predicted wellbeing at T3, albeit marginally, but there was no evidence that wellbeing was improved indirectly through enhanced social cohesion.

The evidence we provide here suggests that neighbourhood identification is related to positive community outcomes and might be beneficially incorporated into population health prevention strategies. In particular, we demonstrate that a whole-of-community intervention such as the Neighbour Day campaign can help to build and support social identification in ways that strengthen local residents' sense of connectedness and community. In this way, our findings suggest that primary prevention targeting individual-level neighbourhood identification may overcome barriers to social connection and have benefits both for individuals (in reducing loneliness and enhancing wellbeing) and communities (in strengthening social cohesion). Our results also

**Table 2a**  
Results (H2a) of linear mixed modelling predicting loneliness at Time 2.

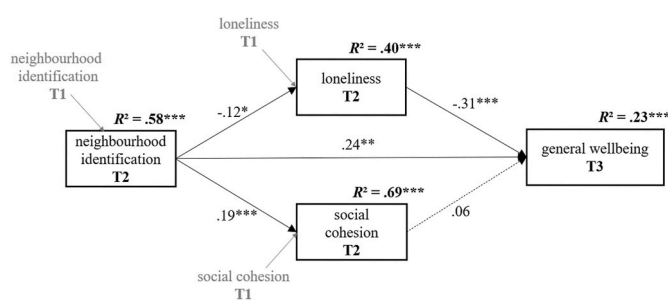
Parameter	Model 1		Model 2		Model 3		Model 4	
	$\beta$	(SE)	B	(SE)	$\beta$	(SE)	$\beta$	(SE)
<i>Fixed part:</i>								
_cons	3.06***	(0.12)	1.37*	(.58)	2.10***	(.64)	2.82***	(.76)
T1 Loneliness			.63***	(.06)	.62***	(.06)	.61***	(.06)
T1 Neighbourhood identification			-.04	(.09)	.19	(.12)	.17	(.12)
<b>T2 Neighbourhood identification (H2a)</b>					<b>-.35**</b>	<b>(.13)</b>	<b>-.35***</b>	<b>(.13)</b>
<i>Covariates</i>								
Age							-.09	(.07)
Sex							.19	(.25)
Education							-.14*	(.06)
Neighbourhood SES							.04	(.04)
<i>Random part:</i>								
Postcode: var (constant)	2.06e-20	(7.37e-20)	1.34e-15	(4.78e-11)	1.42e-11	(5.02e-11)	.03	(.21)
Intraclass correlation (postcode)	6.80e-21	(0)	7.22e-16	(0)	7.90e-12	(0)	.018	(.12)
Log likelihood ratio test p	1.00		.001		.010		.437	

\* $p < .05$ .  
\*\* $p < .01$ .  
\*\*\* $p < .001$ .

**Table 2b**  
Results (H2b) of linear mixed modelling predicting social cohesion at Time 2.

	Model 1		Model 2		Model 3		Model 4	
	B	(SE)	$\beta$	(SE)	B	(SE)	$\beta$	(SE)
<i>Fixed part:</i>								
_cons	5.04***	(0.07)	1.12***	(.20)	.81***	(.21)	.41*	(.28)
T1 Social cohesion			.62***	(.05)	.62***	(.05)	.59***	(.05)
T1 Neighbourhood identification			.14**	(.05)	.04	(.06)	.04	(.06)
<b>T2 Neighbourhood identification (H2b)</b>					<b>.16*</b>	<b>(.06)</b>	<b>.17**</b>	<b>(.06)</b>
<i>Covariates</i>								
Age							.06	(.03)
Sex							-.01	(.11)
Education							.05	(.03)
Neighbourhood SES							.01	(.02)
<i>Random part:</i>								
Postcode: var (constant)	2.21e-23	(1.24e-24)	2.39e-23	(1.58e-19)	5.45e-25	(1.97e-24)	1.32e-25	(4.72e-25)
Intraclass correlation (postcode)	2.08e-23	(0)	6.68e-23	(0)	1.58e-24	(0)	3.99e-25	(0)
Log likelihood ratio test	1.00		.001		.006		.122	

\* $p < .05$ .  
\*\* $p < .01$ .  
\*\*\* $p < .001$ .



**Fig. 3.** Results of structural equation model showing standardised co-efficients and adjusted for baseline measure of neighbourhood identification, loneliness, and social cohesion measures before neighbourhood intervention at Time 1 (T1). \*\* $p < .01$ , \*\*\* $p < .001$ .

suggest that such programs warrant more attention not only as social initiatives but as *health* initiatives; given well-established relationships between loneliness and mortality (Elovainio et al., 2017).

While there is growing interest in community- and place-based efforts to strengthen relationships between neighbours, these studies have

been conducted mainly in the retirement community context (e.g., Berg-Warman and Brodsky, 2006; Greenfield et al., 2015). Other efforts that use a community-based participatory approach to improve social relationships have sought to involve community members as co-producers of their personal and collective wellbeing (Tremblay et al., 2018). In a similar vein, studies using a participatory action approach suggest that creating inclusive partnerships with community members to harness a sense of community identity can prove useful for engaging participants in joint efforts for community change (Dutta, 2017; Walsh et al., 2014). Taken as a whole, this work suggests that social identity processes are critical to interventions that seek to mobilize community members to take action or to pursue health-related change. As we have found, social identification appears to be a crucial mechanism for change to occur (see commentary by Haslam et al., 2021a). This finding accords with other studies which show that identity-based interventions enhance health and wellbeing (in part by increasing identity-compatible healthy behaviours; Steffens et al., 2019; Stevens et al., 2017).

In providing the first large-scale whole-of-community intervention using a nationwide and diverse sample, the present study provides two key advances. First, unlike previously studied social-identity interventions (e.g., as reviewed by Steffens et al., 2019), this intervention is scalable and has the potential to reach a large proportion of the

population. Indeed, according to calculations by Relationships Australia, the campaign had already reached almost 300,000 people in 2019. Second, our data extend the neighbouring literature by pointing to the role of social identification (in this case, with one's neighbourhood) as a key psychological mechanism through which neighbourhood activities benefit loneliness, social cohesion, and wellbeing.

#### 4.1. Strengths, limitations, and suggestions for future research

The present study had three key strengths. First, it followed a (socioeconomically and culturally) diverse community sample across three time-points spanning almost eight months. This sample was broadly representative of community members who are likely to engage with such events in general. Second, the study used a prospective longitudinal design and rigorous statistical methods, unlike previous studies that have been cross-sectional (Gordeev and Egan, 2015; Prezza et al., 2001). Third, the study controlled for factors that might account for change in outcomes, such as neighbourhood socioeconomic status, neighbourhood cultural diversity, and individual attributes such as age, sex, and education.

Nevertheless, as with all research, the study had limitations. Primary among these were the lack of a control group and the limited T1 measures of wellbeing. Nevertheless, it is worth noting that post-hoc analyses demonstrated that our hypothesized model provided a better fit for the data than the reversed order of variables in the structural equation model. Our findings also suggest that people who felt lonelier at T1 were more likely to complete the survey at T2. While this finding may present a source of bias, it is unlikely to be detrimental to hypothesis testing because it indicates that our data captured the very people that the intervention sought to target. The absence of random assignment limits our ability to determine the intervention's effects in causal terms. However, our results are suggestive of the temporal sequence of the relationships between the key variables, given (a) the longitudinal design using three time-points of data, and (b) evidence that these effects remain significant after controlling for baseline responses as well as a range of covariates (e.g., age, sex, education, neighbourhood socioeconomic status). Our sample also consisted of hosts and others who took action related to the Neighbour Day campaign, and who were thus relatively engaged with the community event. Future campaign studies should survey both attendees and hosts to assess whether there are differences in their key outcomes, in particular neighbourhood identification. In addition, further attention to the different types of events that are hosted and their relative benefits could inform intervention planning.

In this study, we could not address the stigma associated with living in disadvantaged neighbourhoods, which may undermine development of shared place-based identities (Keene and Padilla, 2010; McNamara et al., 2013; Robertson et al., 2010). Indeed, the effects of place stigma are particularly harmful to the wellbeing of people who are disadvantaged in multiple (place- and nonplace-based) domains (Felner et al., 2018; Stuber et al., 2003). For example, the word 'ghetto' in the US is often used to describe disadvantaged neighbourhoods with a bad reputation inhabited by particular minority groups; a categorization that is imposed (by outsiders) and beyond a resident's control. Here, research suggests that, depending on the situational context, increasing or decreasing identification with such neighbourhoods may help residents to cope with discrimination because this approach allows residents to re-gain control over an imposed negative identity (Ellemers et al., 2002; Major & O'Brien, 2005). This outcome in turn suggests that grassroots interventions such as Neighbour Day might be effective because these are organized and delivered by locals for locals, rather than by outsiders. Future neighbouring interventions should also take into consideration the effects of perceived place stigma on outcomes.

As mentioned, the dynamics between the individual and neighbourhood (cultural or socioeconomic) context are important to social identity 'fit' and can shape residents' sense of belonging. For example,

an immigrant in a predominantly non-immigrant community might experience more loneliness than a non-immigrant (Dyckhoorn et al., 2020). Similarly, a low-income person living in a middle- or high-income community might be more likely to experience poor health and loneliness than a low-income person in a low-income neighbourhood (Deeg and Thomése, 2005). Although additional analyses demonstrated that neighbourhood cultural diversity, operationalized in terms of (a) English proficiency, (b) parents' country of birth and (c) immigrant status did not explain additional variance on wellbeing, the present study was unable to disentangle these social dynamics fully (e.g., to explore the implication of discrepancies between residents' immigrant status and social class within the social context of their neighbourhood). Accordingly, disentangling these social dynamics might be another fruitful avenue for future research.

Aside from place stigma, some neighbourhoods can also be tied to a cultural identity where different ethnic or immigrant groups might live nearby. Here research suggests that neighbourhoods which have high densities of people from the same ethnic background can be beneficial for residents' wellbeing because they afford residents greater access to social support from similar others (Bjornstrom and Kuhl, 2014; Knies et al., 2016) and help to protect members of ethnic minorities against discrimination (Astell-Burt et al., 2012; Bécares et al., 2009). Accordingly, cultural/ethnic and neighbourhood identities can overlap (though not always) for particular subpopulation groups. Living in a neighbourhood among others who share a common cultural identity may also reinforce belief systems, values, and practices and provide a collective sense of belonging and self-esteem (Pickett and Wilkinson, 2008). Moreover, a positive cultural identity can itself be beneficial to individual wellbeing (Chang et al., 2017; Jones et al., 2018), and there is growing evidence too that bolstering this can benefit wellbeing (e.g., Butler et al., 2019; Wakefield et al., 2017). Nevertheless, these various findings are only just beginning to be incorporated into interventions to support wellbeing (e.g., Hokowhitu et al., 2020). Therefore, the possibility of harnessing both cultural and neighbourhood identities for wellbeing could also be explored in future neighbourhood intervention studies.

Since the COVID-19 pandemic, there has been a rise in loneliness and mental ill-health in the population (Bu et al., 2020; Pan et al., 2020). Lockdown measures have kept people in their homes and limited their movement to the immediate surroundings and, as a result, feeling connected to one's local neighbourhood has never been more important (Hargrove et al., 2020). In this context, the solidarity that arises from a sense of shared identity is critical to a coordinated public health response to the pandemic, as has been illustrated elsewhere (e.g., Haslam et al., 2021b; Jetten et al., 2020). Nevertheless, in a pandemic context, social connectedness experienced through physical proximity has the potential to be harmful, in so far as it facilitates the spread of contagious disease. Indeed, previous research suggests that people are more likely to underestimate risky behaviour when they are around people with whom they share a common identity or ingroup membership (Bressan, 2020; Cruwys et al., 2020, 2021). Here too it has been shown that people tend to underestimate the risk of COVID-19 virus transmission among family and friends (e.g., at home gatherings, at weddings) relative to that posed by strangers (e.g., on public transport) (Leclerc et al., 2020; Mahale et al., 2020). So while fostering a sense of neighbourhood identity via virtual or online means seems likely to be beneficial for wellbeing (e.g., Johnson and Halegoua, 2015), its capacity to have negative health consequences by increasing physical contact warrants further investigation.

## 5. Conclusions

This community-based study evaluated the capacity for a large-scale intervention to boost neighbourhood identification and thereby have a positive impact on residents' wellbeing as well as the perceived social cohesion of the community as a whole. In line with hypotheses derived

from social identity theorizing, we found not only that the intervention led to a sustained increase in neighbourhood identification, but also that this intervention, in turn, reduced loneliness, increased social cohesion, and benefited wellbeing.

Although previous research has identified similar associations, this study is the first to examine them longitudinally and in response to an intervention. Moreover, this study shows how simple, practical events can strengthen social connections between neighbours, and do so at scale. This evidence base is essential for three key groups. First, for community organizations who need to know that their efforts and resources are well directed. Second, for politicians and policymakers who need to know that these efforts and resources are worth investment. Third, for researchers who want to inform both these groups about the most promising ways forward. Our sense is that this study has important messages for all three groups. But our main hope is that the principal beneficiaries will ultimately be community members themselves.

## CredIT

Polly Fong, Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Formal analysis, Visualization. Tegan Cruwys, Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Project administration. Sam L. Robinson, Investigation, Writing – original draft, Writing – review & editing, Funding acquisition. S. Alexander Haslam, Writing – original draft, Writing – review & editing. Catherine Haslam, Writing – original draft, Writing – review & editing. Paula L. Mance, Writing – original draft, Funding acquisition. Claire L. Fisher, Writing – original draft, Writing – review & editing.

## Declaration of competing interest

Three of the authors are employed by Relationships Australia, the community based not-for-profit organisation which promotes Neighbour Day. The data collection was funded by Relationships Australia.

## Acknowledgments

The second author is supported by the National Health and Medical Research Council of Australia, #1173270. This research was funded by Relationships Australia.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2021.113909>.

## References

- Astell-Burt, T., Maynard, M.J., Lenguerrand, E., Harding, S., 2012. Racism, ethnic density and psychological well-being through adolescence: evidence from the Determinants of Adolescent Social well-being and Health longitudinal study. *Ethn. Health* 17 (1–2), 71–87.
- Baker, D., 2012. All the Lonely People: Loneliness in Australia. No. 9), pp. 2001–2009 (Canberra).
- Ball, T.C., Nario-Redmond, M.R., 2014. Positive social identity interventions. In: Parks, A.C., Schueller, S.M. (Eds.), *The Wiley Blackwell Handbook of Positive Psychological Interventions*. John Wiley & Sons, pp. 327–343.
- Barber, S., Hickson, D.M.A., Kawachi, I., Subramanian, S.V., Earls, F., 2016. Double-jeopardy: the joint impact of neighborhood disadvantage and low social cohesion on cumulative risk of disease among African American men and women in the Jackson Heart Study. *Soc. Sci. Med.* <https://doi.org/10.1016/j.socscimed.2016.02.001>.
- Bartels, M., Cacioppo, J.T., Hudziak, J.J., Boomsma, D.I., 2008. Genetic and environmental contributions to stability in loneliness throughout childhood. *Am. J. Med. Genet., Part B: Neuropsychiatric Genetics* 147 (3), 385–391. <https://doi.org/10.1002/ajmg.b.30608>.
- Bécares, L., Nazroo, J., Stafford, M., 2009. The buffering effects of ethnic density on experienced racism and health. *Health Place* 15 (3), 700–708. <https://doi.org/10.1016/j.healthplace.2008.10.008>.
- Berg-Warman, A., Brodsky, J., 2006. The supportive community A new concept for enhancing the quality of life of elderly living in the community. *J. Aging Soc. Pol.* 18 (2), 69–83. <https://doi.org/10.1300/J031v18n02>.
- Bjornstrom, E.E.S., Kuhl, D.C., 2014. A different look at the epidemiological paradox: self-rated health, perceived social cohesion, and neighborhood immigrant context. *Soc. Sci. Med.* 120, 118–125. <https://doi.org/10.1016/j.socscimed.2014.09.015>.
- Bolland, J.M., McCallum, D.M., 2002. Neighboring and community mobilization in high-poverty inner-city neighborhoods. *Urban Aff. Rev.* 38 (1), 42–69. <https://doi.org/10.1177/107808702401097790>.
- Bressan, P., 2020. Strangers look sicker (with implications in times of COVID-19). *Bioessays* 1–12. <https://doi.org/10.1002/bies.202000158>. October.
- Bu, F., Steptoe, A., Fancourt, D., 2020. Loneliness during a strict lockdown: trajectories and predictors during the COVID-19 pandemic in 38,217 United Kingdom adults. *Soc. Sci. Med.* 265 (November) <https://doi.org/10.1016/j.socscimed.2020.113521>.
- Butler, T.L., Anderson, K., Garvey, G., Cunningham, J., Ratcliffe, J., Tong, A., Howard, K., 2019. Aboriginal and Torres Strait Islander people's domains of wellbeing: a comprehensive literature review. *Soc. Sci. Med.* 233 (June), 138–157.
- Butterworth, P., Crosier, T., 2004. The validity of the SF-36 in an Australian national household survey: demonstrating the applicability of the household income and labour dynamics in Australia (HILDA) survey to examination of health inequalities. *BMC Publ. Health* 4, 1–11. <https://doi.org/10.1186/1471-2458-4-44>.
- Cacioppo, J.T., Cacioppo, S., 2014. Social relationships and health: the toxic effects of perceived social isolation. *Soc. Personal Psychol. Compass* 8 (2), 58–72. <https://doi.org/10.1038/jid.2014.371>.
- Campbell, K.E., Lee, B.A., 1990. Gender differences in urban neighboring. *Socio. Q.* 31 (4), 495–512.
- Chang, M.X.-L., Jetten, J., Cruwys, T., Haslam, C., 2017. Cultural identity and the expression of depression: a social identity perspective. *J. Community Appl. Soc. Psychol.* 27 (1), 16–34.
- Chatterjee, K., Chng, S., Clark, B., Davis, A., De Vos, J., Ettema, D., Reardon, L., 2019. Commuting and wellbeing: a critical overview of the literature with implications for policy and future research. *Transport Rev.* 1–30. <https://doi.org/10.1080/01441647.2019.1649317>.
- Cheshire, L., Fitzgerald, R., Liu, Y., 2018. Neighbourhood change and neighbour complaints: how gentrification and densification influence the prevalence of problems between neighbours. *Urban Stud.* <https://doi.org/10.1177/0042098018771453>.
- Cooperman, A., Smith, G., Ritchey, K., 2015. America's Changing Religious Landscape: Christian Decline Sharply as Share of Population; Unaffiliated and Other Faiths Continue to Grow (Washington DC).
- Courtin, E., Knapp, M., 2017. Social isolation, loneliness and health in old age: a scoping review. *Health Soc. Care Community* 25 (3), 799–812. <https://doi.org/10.1111/hsc.12311>.
- Cox, A., Dudgeon, P., Holland, C., Kelly, K., Scrine, C., Walker, R., 2014. Using participatory action research to prevent suicide in Aboriginal and Torres Strait Islander communities. *Australian J. Prim. Health* 20, 345–349. <https://doi.org/10.1071/PY14043>.
- Crossley, M.L., 2001. The "armistead" project: an exploration of gay men, sexual practices, community health promotion and issues of empowerment. *J. Community Appl. Soc. Psychol.* 11 (2), 111–123. <https://doi.org/10.1002/casp.618>.
- Cruwys, T., Greenaway, K.H., Ferris, L.J., Rathbone, J.A., Saeri, A.K., Williams, E., Grace, L., 2021. When trust goes wrong: a social identity model of risk taking. *J. Pers. Soc. Psychol.* 120 (1), 57–83. <https://doi.org/10.1037/pspi0000243>.
- Cruwys, T., Stevens, M., Greenaway, K.H., 2020. A social identity perspective on COVID-19: health risk is affected by shared group membership. *Br. J. Soc. Psychol.* 59 (3), 584–593. <https://doi.org/10.1111/bjso.12391>.
- Dahlberg, L., Andersson, L., McKee, K.J., Lennartsson, C., 2015. Predictors of loneliness among older women and men in Sweden: a national longitudinal study. *Aging Ment. Health* 19 (5), 409–417. <https://doi.org/10.1080/13607863.2014.944091>.
- Deeg, D.J.H., Thomése, G.C.F., 2005. Discrepancies between personal income and neighbourhood status: effects on physical and mental health. *Eur. J. Ageing* 2 (2), 98–108. <https://doi.org/10.1007/s10433-005-0027-4>.
- Doménech-Abella, J., Mundó, J., Leonardi, M., Chatterji, S., Tobiasz-Adamczyk, B., Koskinen, S., Ayuso-Mateos, J.L., Haro, J.M., Olaya, B., 2020. Loneliness and depression among older European adults: the role of perceived neighborhood built environment. *Health Place* 62 (12). <https://doi.org/10.1016/j.healthplace.2019.102280>.
- Dong, Y., Peng, C.Y.J., 2013. Principled missing data methods for researchers. *SpringerPlus* 2 (1), 1–17. <https://doi.org/10.1186/2193-1801-2-222>.
- Doosje, B., Ellemers, N., Spears, R., 1995. Perceived intragroup variability as a function of group status and identification. *J. Exp. Soc. Psychol.* <https://doi.org/10.1006/jesp.1995.1018>.
- Dutta, U., 2017. Creating inclusive identity narratives through participatory action research. *J. Community Appl. Soc. Psychol.* 27 (6), 476–488. <https://doi.org/10.1002/casp.2328>.
- Dykxhoorn, J., Lewis, G., Hollander, A.C., Kirkbride, J.B., Dalman, C., 2020. Association of neighbourhood migrant density and risk of non-affective psychosis: a national, longitudinal cohort study. *Lanc. Psychiatr.* 7 (4), 327–336. [https://doi.org/10.1016/S2215-0366\(20\)30059-6](https://doi.org/10.1016/S2215-0366(20)30059-6).
- Ehsan, A., Sommet, N., Morselli, D., Spini, D., 2020. Collaborative competence, social capital, and mental health: a cross-sectional analysis of a community-based intervention for older adults. *J. Community Appl. Soc. Psychol.* <https://doi.org/10.1002/casp.2481>. August.
- Ellemers, N., Spears, R., Doosje, B., 2002. Self and social identity. *Annu. Rev. Psychol.* 53 (1), 161–186. <https://doi.org/10.1146/annurev.psych.53.100901.135228>.

- Elovainio, M., Hakulinen, C., Pulkki-Råback, L., Virtanen, M., Josefsson, K., Jokela, M., Kivimäki, M., 2017. Contribution of risk factors to excess mortality in isolated and lonely individuals: an analysis of data from the UK Biobank cohort study. *Lanc. Publ. Health* 2 (6), e260–e266. [https://doi.org/10.1016/S2468-2667\(17\)30075-0](https://doi.org/10.1016/S2468-2667(17)30075-0).
- Epley, N., Schroeder, J., 2014. Mistakenly seeking solitude. *J. Exp. Psychol. Gen.* 143 (5), 1980–1999. <https://doi.org/10.1037/a0037323>.
- Erdem, Ö., Prins, R.G., Voorham, T.A.J.J., Van Lenthe, F.J., Burdorf, A., 2015. Structural neighbourhood conditions, social cohesion and psychological distress in The Netherlands. *Eur. J. Publ. Health* 25 (6), 995–1001. <https://doi.org/10.1093/eurpub/ckv120>.
- Farrell, S.J., Aubry, T., Coulombe, D., 2004. Neighborhoods and neighbors: do they contribute to personal well-being? *J. Community Psychol.* 32 (1), 9–25. <https://doi.org/10.1002/jcop.10082>.
- Feinstein, L., Sabates, R., Sorhaindo, T.M.A.A., Hammond, C., 2006. Measuring the effects of education on health and civic engagement. *Journal Proceedings of the Copenhagen Symposium*. OECD.
- Felner, J.K., Dudley, T.D., Ramirez-Valles, J., 2018. “Anywhere but here”: querying spatial stigma as a social determinant of health among youth of color accessing LGBTQ services in Chicago’s Boystown. *Soc. Sci. Med.* 213, 181–189. <https://doi.org/10.1016/j.socscimed.2018.08.001>.
- Finlay, J., Esposito, M., Kim, M.H., Gomez-Lopez, I., Clarke, P., 2019. Closure of ‘third places’: Exploring potential consequences for collective health and wellbeing. *Health Place* 60. <https://doi.org/10.1016/j.healthplace.2019.102225>.
- Fong, P., Cruwys, T., Haslam, C., Haslam, S.A., 2019a. Neighbourhood identification and mental health: how social identification moderates the relationship between socioeconomic disadvantage and health. *J. Environ. Psychol.* 61, 101–114. <https://doi.org/10.1016/j.jenvp.2018.12.006>.
- Fong, P., Cruwys, T., Haslam, C., Haslam, S.A., 2019b. Neighbourhood identification buffers the effects of (de-)gentrification and personal socioeconomic position on mental health. *Health Place* 57, 247–256. <https://doi.org/10.1016/j.healthplace.2019.05.013>.
- Forrest, J., Dunn, K., 2010. Attitudes to multicultural values in diverse spaces in Australia’s immigrant cities, Sydney and Melbourne. *Space Polity* 14 (1), 81–102. <https://doi.org/10.1080/13562571003737791>.
- Gardiner, C., Geldenhuys, G., Gott, M., 2018. Interventions to reduce social isolation and loneliness among older people: an integrative review. *Health Soc. Care Community* 26 (2), 147–157. <https://doi.org/10.1111/hsc.12367>.
- Gleibs, I.H., Haslam, C., Jones, J.M., Haslam, S.A., McNeill, J., Connolly, H., 2011. No country for old men? The role of a “Gentlemen’s Club” in promoting social engagement and psychological well-being in residential care. *Aging Ment. Health* 15 (4), 456–466. <https://doi.org/10.1080/13607863.2010.536137>.
- Golden, J., Conroy, R.M., Bruce, E., Denihan, A., Greene, E., Kirby, M., Lawlor, B.A., 2009. Loneliness, social support networks, mood and wellbeing in community-dwelling elderly. *International Journal of Geriatric Psychiatry* 24, 694–700. <https://doi.org/10.1002/gps.2181>.
- Gonzales, L., Yanos, P.T., Stefania, A., Alexander, M.J., Harney-Delehanty, B., 2018. The role of neighborhood factors and community stigma in predicting community participation among persons with psychiatric disabilities. *Psychiatr. Serv.* 69 (1), 76–83. <https://doi.org/10.1176/appi.ps.201700165>.
- Goodeve, V.S., Egan, M., 2015. Social cohesion, neighbourhood resilience, and health: evidence from New Deal for Communities programme. *Lancet* 386, S39. [https://doi.org/10.1016/s0140-6736\(15\)00877-6](https://doi.org/10.1016/s0140-6736(15)00877-6).
- Greenfield, E.A., Oberlink, M., Scharlach, A.E., Neal, M.B., Stafford, P.B., 2015. Age-friendly community initiatives: conceptual issues and key questions. *Gerontol.* 55 (2), 191–198. <https://doi.org/10.1093/geront/gnv005>.
- Greenfield, E.A., Reyes, L., 2014. Continuity and change in relationships with neighbors: implications for psychological well-being in middle and later life. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 70 (4), 607–618. <https://doi.org/10.1093/geronb/gbu084>.
- Grimm Jr., R.T., Dietz, N., 2018. “Where Are America’s Volunteers? A Look at America’s Widespread Decline in Volunteering in Cities and states.” *Research Brief. Do Good Institute, University of Maryland*.
- Hampton, K., Wellman, B., 2003. Neighboring in Netville: how the internet supports community and social capital in a wired suburb. *City Community* 2 (4), 277–311. <https://doi.org/10.1046/j.1535-6841.2003.00057.x>.
- Hargrove, T.W., García, C., Cagney, K.A., 2020. The role on Neighborhoods in Shaping the aging experience during times of crisis. *Publ. Pol. Aging Rep.* 31 (1), 38–43. <https://doi.org/10.1093/ppar/praa041>.
- Haslam, C., Cruwys, T., Chang, M.X.-L., Bentley, S.V., Haslam, S.A., Dingle, G.A., Jetten, J., 2019. GROUPS 4 HEALTH reduces loneliness and social anxiety in adults with psychological distress: findings from a randomized controlled trial. *J. Consult. Clin. Psychol.* 87 (9), 787–801.
- Haslam, C., Cruwys, T., Haslam, S.A., Dingle, G., Chang, M.X.L., 2016. Groups 4 Health: Evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *Journal of Affective Disorders* 194, 188–195. <https://doi.org/10.1016/j.jad.2016.01.010>.
- Haslam, S.A., Haslam, C., Jetten, J., Cruwys, T., Bentley, S.V., 2021a. Rethinking the nature of the person at the heart of the biopsychosocial model: exploring social change ways not just personal pathways. *Soc. Sci. Med.* <https://doi.org/10.1016/j.socscimed.2020.113566>.
- Haslam, C., Jetten, J., Cruwys, T., Dingle, G.A., Haslam, S.A., 2018. *The New Psychology of Health: Unlocking the Social Cure*. Routledge, London. <https://doi.org/10.4324/9781315648569>.
- Haslam, S.A., Jetten, J., Postmes, T., Haslam, C., 2009. Social identity, health and well-being: an emerging agenda for applied psychology. *Appl. Psychol.* 58 (1), 1–23. <https://doi.org/10.1111/j.1464-0597.2008.00379.x>.
- Haslam, S.A., Steffens, N.K., Reicher, S.D., Bentley, S.V., 2021b. Identity leadership in a crisis: a 5R framework for learning from responses to COVID-19. *Soc. Iss. Pol. Rev.* 15, 35–83. <https://doi.org/10.1111/sipr.12075>.
- Hawkey, L.C., Cacioppo, J., 2010. Loneliness matters: a theoretical and empirical review of consequences and mechanisms. *Ann. Behav. Med.* 40 (2), 218–227. <https://doi.org/10.1017/S0308210500025361>.
- Heath, S.C., Rabinovich, A., Barreto, M., 2017. Putting identity into the community: exploring the social dynamics of urban regeneration. *Eur. J. Soc. Psychol.* 47 (7), 855–866. <https://doi.org/10.1002/ejsp.2296>.
- Heun, R., Bonsignore, M., Barkow, K., Jessen, F., 2001. Validity of the five-item WHO Well-Being Index (WHO-5) in an elderly population. *Eur. Arch. Psychiatr. Clin. Neurosci.* 251 (S2), 27–31. <https://doi.org/10.1007/bf03035123>.
- Holt-Lunstad, J., Robles, T.F., Sbarra, D.A., 2017. Advancing social connection as a public health priority in the United States. *Am. Psychol.* 72 (6), 517–530. <https://doi.org/10.1037/amp000103>.
- Hokowhitu, B., Oetzel, J.G., Simpson, M.L., Nock, S., Reddy, R., Meha, P., Ruru, S., 2020. Kaum ā tua Mana Motuhake Pōi : a study protocol for enhancing wellbeing , social connectedness and cultural identity for Māori elders. *BMC Geriatr.* 20, 377. <https://doi.org/10.1186/s12877-020-01740-3>, 1–15.
- Jetten, J., Haslam, C., Haslam, S.A., 2012. *The Social Cure: Identity, Health and Well-Being*. Hove/ Psychology Press, New York.
- Jetten, J., Reicher, S.D., Haslam, S.A., Cruwys, T., 2020. *Together Apart: the Psychology of COVID-19*. Sage.
- Johnson, B.J., Halegoua, G.R., 2015. Can social media save a neighborhood organization? *Plann. Pract. Res.* 30 (3), 248–269. <https://doi.org/10.1080/02697459.2015.1051319>.
- Jones, R., Thurber, K., Wright, A., Chapman, J., Donohoe, P., Davis, V., Lovett, R., 2018. Associations between participation in a ranger program and health and wellbeing outcomes among aboriginal and Torres Strait Islander people in Central Australia: a proof of concept study. *Int. J. Environ. Res. Publ. Health* 15 (7), 1478.
- Kearns, A., Whitley, E., 2018. Perceived neighborhood ethnic diversity and social outcomes: context-dependent effects within a postindustrial city undergoing regeneration. *J. Urban Aff.* 40 (2), 186–208. <https://doi.org/10.1080/07352166.2017.1343632>.
- Kearns, A., Whitley, E., Tannahill, C., Ellaway, A., 2015. Loneliness, social relations and health and wellbeing in deprived communities. *Psychol. Health Med.* 20 (3), 332–344. <https://doi.org/10.1080/13548506.2014.940354>.
- Keene, D.E., Padilla, M.B., 2010. Race, class and the stigma of place: moving to “opportunity” in Eastern Iowa. *Health Place* 16 (6), 1216–1223. <https://doi.org/10.1016/j.healthplace.2010.08.006>.
- Kelagher, M., Warr, D.J., Feldman, P., Tacticos, T., 2010. Health & place living in ‘birdsville’: exploring the impact of neighbourhood stigma on health. *Health Place* 16 (2), 381–388. <https://doi.org/10.1016/j.healthplace.2009.11.010>.
- Kim, J.H., 2018. Social media use and wellbeing. In: Maddux, J.E. (Ed.), *Frontiers of Social Psychology. Subjective Wellbeing and Life Satisfaction*. Routledge, pp. 253–271.
- Klinenberg, E., 2016. Social isolation, loneliness, and living alone: identifying the risks for public health. *Am. J. Publ. Health* 106 (5), 786–787. <https://doi.org/10.2105/AJPH.2016.303166>.
- Knies, G., Nandi, A., Platt, L., 2016. Life satisfaction , ethnicity and neighbourhoods : is there an effect of neighbourhood ethnic composition on life satisfaction ? *Soc. Sci. Res.* 60, 110–124. <https://doi.org/10.1016/j.ssreresearch.2016.01.010>.
- Koni, E., Moradi, S., Arahanga-Doyle, H., Neha, T., Hayhurst, J.G., Boyes, M., Scarf, D., 2019. Promoting resilience in adolescents: a new social identity benefits those who need it most. *PLoS One* 14 (1), 1–11. <https://doi.org/10.1371/journal.pone.0210521>.
- Kusenbach, M., 2006. Patterns of neighboring: practicing community in the parochial realm. *Symbolic Interact.* 29 (3), 279–306. <https://doi.org/10.1525/si.2006.29.3.279>.
- Leclerc, Q.J., Fuller, N.M., Knight, L.E., Funk, S., Knight, G.M., 2020. What settings have been linked to SARS-CoV-2 transmission clusters? *Wellcome Open Res.* 5 (83), 1–18. <https://doi.org/10.12688/wellcomeopenres.15889.1>.
- Lee, B.A., Iceland, J., Farrell, C.R., 2014. Is ethnic/racial residential integration on the rise? Evidence from metropolitan and micropolitan America Since 1980. In: Logan, J. (Ed.), *Diversity and Disparities*. Russell Sage Foundation, New York, pp. 415–456.
- Leigh-Hunt, N., Baguley, D., Bash, K., Turner, V., Turnbull, S., Valtorta, N., Caan, W., 2017. An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Publ. Health* 152, 157–171. <https://doi.org/10.1016/j.puhe.2017.07.035>.
- Levine, M., Prosser, A., Evans, D., Reicher, S., 2005. Identity and emergency intervention: how social group membership and inclusiveness of group boundaries shape helping behavior. *Pers. Soc. Psychol. Bull.* 31 (4), 443–453. <https://doi.org/10.1177/0146167204271651>.
- MacDonald, S.J., Deacon, L., Nixon, J., Akintola, A., Gillingham, A., Kent, J., Ellis, G., Mathews, D., Ismail, A., Sullivan, S., Dore, S., Highmore, L., 2018. ‘The invisible enemy’: disability, loneliness and isolation. *Disabil. Soc.* 33 (7), 1138–1159. <https://doi.org/10.1080/09687599.2018.1476224>.
- Mahale, P., Rothfuss, C., Bly, S., Kelley, M., Bennett, S., Huston, S.L., Robinson, S., 2020. Multiple COVID-19 outbreaks linked to a wedding reception in rural Maine — august 7–September 14, 2020. *MMWR (Morb. Mortal. Wkly. Rep.)* 69, 1686–1690. [https://doi.org/10.15585/mmwr.mm6945a5external icon](https://doi.org/10.15585/mmwr.mm6945a5external%20icon).
- Mahmoudi Farahani, L., 2016. The value of the sense of community and neighbouring. *Hous. Theor. Soc.* 33 (3), 357–376. <https://doi.org/10.1080/14036096.2016.1155480>.

- Major, B., O'Brien, L.T., 2005. The social psychology of stigma. In: *Annual Review of Psychology*, vol. 56, pp. 393–421. <https://doi.org/10.1146/annurev.psych.56.091103.070137>.
- Mair, C., Diez Roux, A.V., Galea, S., 2008. Are neighborhood characteristics associated with depressive symptoms? A critical review. *J. Epidemiol. Community Health* 62 (11), 940–946. <https://doi.org/10.1136/jech.2007.066605>.
- Masden, C., Grevet, C., Grinter, R., Gilbert, E., Edwards, W.K., 2014. Tensions in scaling-up community social media: a multi-neighborhood study of nextdoor. *Conf. Human Fact. Comput. Syst. - Proceed.* 3239–3248. <https://doi.org/10.1145/2556288.2557319>.
- Masi, C.M., Chen, H.Y., Hawkey, L.C., Cacioppo, J.T., 2011. A meta-analysis of interventions to reduce loneliness. *Pers. Soc. Psychol. Rev.* 15 (3), 219–266. <https://doi.org/10.1177/1088868310377394>.
- McIntyre, J.C., Wickham, S., Barr, B., Bentall, R.P., 2018. Social identity and psychosis: associations and psychological mechanisms. *Schizophr. Bull.* 44 (3), 681–690. <https://doi.org/10.1093/schbul/sbx110>.
- McNamara, N., Stevenson, C., Muldoon, O.T., 2013. Community identity as resource and context: a mixed method investigation of coping and collective action in a disadvantaged community. *Eur. J. Soc. Psychol.* 43 (5), 393–403. <https://doi.org/10.1002/ejsp.1953>.
- McPherson, M., Smith-lovin, L., Brashears, M.E., 2006. Social isolation in America: changes in core discussion networks over two decades. *Am. Socio. Rev.* 71, 353–375.
- Miao, J., Wu, X., Sun, X., 2019. Neighborhood, social cohesion, and the elderly's depression in Shanghai. *Soc. Sci. Med.* 229 (August), 134–143. <https://doi.org/10.1016/j.socscimed.2018.08.022>, 2018.
- Milgram, S., 1972. *The Familiar Stranger: An Aspect of Urban Anonymity*. Division 8, Newsletter, Division of Personality and Social Psychology (Washington D.C.).
- Nowland, R., Necka, E.A., Cacioppo, J.T., 2018. Loneliness and social internet use: pathways to reconnection in a digital World? *Perspect. Psychol. Sci.* 13 (1), 70–87. <https://doi.org/10.1177/1745691617713052>.
- O'Rourke, H.M., Collins, L., Sidani, S., 2018. Interventions to address social connectedness and loneliness for older adults: a scoping review. *BMC Geriatr.* 18 (1), 1–13. <https://doi.org/10.1186/s12877-018-0897-x>.
- Pan, K.Y., Kok, A.A.L., Eikelenboom, M., Horsfall, M., Jörg, F., Luteijn, R.A., Rhebergen, D., Oppen, P. van, Giltay, E.J., Penninx, B.W.J.H., 2020. The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: a longitudinal study of three Dutch case-control cohorts, 366 *Lanc. Psychiatr.* 1–9. [https://doi.org/10.1016/S2215-0366\(20\)30491-0](https://doi.org/10.1016/S2215-0366(20)30491-0), 20.
- Pendola, R., Gen, S., 2008. Does “main street” promote sense of community?: a comparison of San Francisco neighborhoods. *Environ. Behav.* 40 (4), 545–574. <https://doi.org/10.1177/0013916507301399>.
- Pickett, K.E., Wilkinson, R.G., 2015. Income inequality and health: a causal review. *Soc. Sci. Med.* 128, 316–326. <https://doi.org/10.1016/j.socscimed.2014.12.031>.
- Pretty, G., Bishop, B., Fisher, A., Sonn, C., 2007. Psychological sense of community and its relevance to well-being and everyday life in Australia. *Australian Community Psychol.* 19 (2), 6–25.
- Prezza, M., Amici, M., Roberti, T., Tedeschi, G., 2001. Sense of community referred to the whole town: its relations with neighboring, loneliness, life satisfactions, and area of residence. *J. Community Psychol.* 29 (1), 29–52. [https://doi.org/10.1002/1520-6629\(200101\)29:1<29::AID-JCOP3>3.0.CO;2-C](https://doi.org/10.1002/1520-6629(200101)29:1<29::AID-JCOP3>3.0.CO;2-C).
- Putnam, R.D., 2007. E pluribus unum: diversity and community in the twenty-first century the 2006 Johan Skytte Prize Lecture. *Scand. Polit. Stud.* 30 (2), 137–174. <https://doi.org/10.1111/j.1467-9477.2007.00176.x>.
- Rees, J.H., Bamberg, S., 2014. Special issue article : the social psychology of climate change Climate protection needs societal change : determinants of intention to participate in collective climate action. *Eur. J. Soc. Psychol.* 44, 466–473.
- Robertson, D., McIntosh, I., Smyth, J., 2010. Neighbourhood identity: the path dependency of class and place. *Hous. Theor. Soc.* 27 (3), 258–273. <https://doi.org/10.1080/14036090903326429>.
- Ross, C.E., Jang, S.J., 2000. Neighborhood disorder, fear, and mistrust: the buffering role of social ties with neighbors. *Am. J. Community Psychol.* 28 (4), 401–420. <https://doi.org/10.1023/A:1005137713332>.
- Sampson, R.J., Raudenbush, S.W., Earls, F., 1997. Neighborhoods and violent crime: a multilevel study of collective efficacy. *Science* 277 (5328), 918–924. <https://doi.org/10.1126/science.277.5328.918>.
- Scarf, D., Moradi, S., McGaw, K., Hewitt, J., Hayhurst, J.G., Boyes, M., Hunter, J.A., 2016. Somewhere I belong: long-term increases in adolescents' resilience are predicted by perceived belonging to the in-group. *Br. J. Soc. Psychol.* 55 (3), 588–599. <https://doi.org/10.1111/bjso.12151>.
- Smith, S., Bellaby, P., Lindsay, S., 2010. Social inclusion at different scales in the urban environment: locating the community to empower. *Urban Stud.* 47 (7), 1439–1457. <https://doi.org/10.1177/0042098009353618>.
- Stafford, M., Silva, M. De, Stansfeld, S., Marmot, M., 2008. Neighbourhood Social Capital and Common Mental Disorder : Testing the Link in a General Population Sample, vol. 14, pp. 394–405. <https://doi.org/10.1016/j.healthplace.2007.08.006>.
- Steffens, N.K., La Rue, C.J., Haslam, C., Walter, Z.C., Munt, K.A., Haslam, S.A., Tarrant, M., 2019. Social identification-building interventions to improve health : a systematic review and meta- analysis. *Health Psychol. Rev.* 1–66. <https://doi.org/10.1080/17437199.2019.1669481>.
- Stevens, M., Rees, T., Coffee, P., Steffens, N.K., Haslam, S.A., Polman, R., 2017. A social identity approach to understanding and promoting physical activity. *Sports Med.* 47 (10), 1911–1918. <https://doi.org/10.1007/s40279-017-0720-4>.
- Stevenson, C., Easterbrook, M., Harkin, L., McNamara, N., Kellezi, B., Shuttleworth, I., 2019. Neighborhood identity helps residents cope with residential diversification: contact in increasingly mixed neighborhoods of Northern Ireland. *Polit. Psychol.* 40 (2), 277–295. <https://doi.org/10.1111/pops.12510>.
- Stevenson, C., Costa, S., Easterbrook, M.J., McNamara, N., Kellezi, B., 2020. Social cure processes help lower intergroup anxiety among neighborhood residents. *Polit. Psychol.* <https://doi.org/ezproxy.library.uq.edu.au/10.1111/pops.12667>.
- Stuber, J., Galea, S., Ahern, J., Blaney, S., Fuller, C., 2003. The association between multiple domains of discrimination and self-assessed health: a multilevel analysis of Latinos and blacks in four low-income New York city neighborhoods. *Health Serv. Res.* 38 (6 II), 1735–1760. <https://doi.org/10.1111/j.1475-6773.2003.00200.x>.
- Tajfel, H., Turner, J.C., 1979. An integrative theory of intergroup conflict. In: Austin, G., Worchel, S. (Eds.), *The Social Psychology of Intergroup Relations*. Brooks/Cole, Monterey, CA, pp. 33–47.
- Sturgis, P., Brunton-smith, I.A.N., Read, S., Allum, N., 2010. Does ethnic diversity erode trust? Putnam's 'hunkering down' thesis reconsidered. *British Journal of Political Science* 41 (1), 57–82. <https://doi.org/10.1017/S0007123410000281>.
- Tajfel, Henri, 1978. *Differentiation between Social Groups: Studies in the Social Psychology of Intergroup Relations*. Academic Press, London.
- Talò, C., Mannarini, T., Rochira, A., 2014. Sense of community and community participation: a meta-analytic review. *Soc. Indic. Res.* 117 (1), 1–28. <https://doi.org/10.1007/s11205-013-0347-2>.
- Teig, E., Amulya, J., Bardwell, L., Buchenau, M., Marshall, J.A., Litt, J.S., 2009. Collective efficacy in Denver, Colorado: strengthening neighborhoods and health through community gardens. *Health Place* 15 (4), 1115–1122. <https://doi.org/10.1016/j.healthplace.2009.06.003>.
- Tigges, L.M., Browne, I., Green, G.P., 1998. Social isolation of the urban poor: race, class, and neighborhood effects on social resources. *Socio. Q.* 39 (1), 53–77. <https://doi.org/10.1111/j.1533-8525.1998.tb02349.x>.
- Tremblay, M.C., Martin, D.H., McComber, A.M., McGregor, A., Macaulay, A.C., 2018. Understanding community-based participatory research through a social movement framework: a case study of the Kahnawake Schools Diabetes Prevention Project. *BMC Publ. Health* 18 (1), 1–17. <https://doi.org/10.1186/s12889-018-5412-y>.
- Turner, J.C., 1981. Toward a cognitive redefinition of the social group. *Cah. Psychol. Cognit. J.* (2), 93–118.
- Turner, J.C., Hogg, M.A., Oakes, P.J., Reicher, S., Wetherell, M.S., 1987. *Rediscovering the Social Group: A Self-Categorization Theory*. Blackwell, Oxford.
- Unger, D.G., Wandersman, A., 1985. The importance of neighbors: the social, cognitive, and affective components of neighboring. *Am. J. Community Psychol.* 13 (2), 139–169. <https://doi.org/10.1007/BF00905726>.
- van den Berg, P., Kemperman, A., de Kleijn, B., Borgers, A., 2016. Ageing and loneliness: the role of mobility and the built environment. *Travel Behav. Soc.* 5, 48–55. <https://doi.org/10.1016/j.tbs.2015.03.001>.
- Van Olphen, J., Schulz, A., Israel, B., Chatters, L., Klem, L., Parker, E., Williams, D., 2003. Religious involvement, social support, and health among African-American women on the east side of Detroit. *J. Gen. Intern. Med.* 18 (7), 549–557. <https://doi.org/10.1046/j.1525-1497.2003.21031.x>.
- van Zomeren, M., Postmes, T., Spears, R., 2008. Toward an integrative social identity model of collective action: a quantitative research synthesis of three socio-psychological perspectives. *American Psychological Association* 134 (4), 504–535. <https://doi.org/10.1037/0033-2909.134.4.504>.
- Wakefield, J.R.H., Sani, F., Madhok, V., Norbury, M., Dugard, P., Gabbaneli, C., Arnetoli, M., Beconcini, G., Botindari, L., Grifoni, F., Paoli, P., Poggesi, F., 2017. The relationship between group identification and satisfaction with life in a cross-cultural community sample. *J. Happiness Stud.* 18 (3), 785–807. <https://doi.org/10.1007/s10902-016-9735-z>.
- Walsh, C.A., Hewson, J., Shier, M., Morales, E., 2014. Youth stakeholders in neighbourhood revitalization: a case example. *J. Arts Humanit.* 3 (3), 1–11. <https://doi.org/10.18533/journal.v3i3.388>.
- Walton, E., 2018. The meaning of community in diverse neighborhoods: stratification of influence and mental health. *Health Place* 50 (10), 6–15. <https://doi.org/10.1016/j.healthplace.2018.01.001>.
- Wang, J., Mann, F., Lloyd-Evans, B., Ma, R., Johnson, S., 2018. Associations between loneliness and perceived social support and outcomes of mental health problems: a systematic review. *BMC Psychiatr.* 18 (1), 1–16. <https://doi.org/10.1186/s12888-018-1736-5>.
- Weston, G., Zilanawala, A., Webb, E., Carvalho, L.A., McMunn, A., 2019. Long work hours, weekend working and depressive symptoms in men and women: findings from a UK population-based study. *J. Epidemiol. Community Health* 73 (5), 465–474. <https://doi.org/10.1136/jech-2018-211309>.
- Wilkinson, D., 2007. The multidimensional nature of social cohesion: psychological sense of community, attraction, and neighboring. *Am. J. Community Psychol.* 40 (3–4), 214–229. <https://doi.org/10.1007/s10464-007-9140-1>.
- Yetim, N., Yetim, U., 2014. Sense of community and individual well-being: a research on fulfillment of needs and social capital in the Turkish community. *Soc. Indic. Res.* 115 (1), 93–115. <https://doi.org/10.1007/s11205-012-0210-x>.
- Zahnw, R., Tsai, A., 2019. Crime victimization, place attachment , and the moderating role of neighborhood social ties and neighboring behavior. *Environ. Behav.* (9), 1–29. <https://doi.org/10.1177/0013916519875175>.
- Ziersch, A.M., 2005. Health implications of access to social capital: findings from an Australian study. *Soc. Sci. Med.* 61 (10), 2119–2131. <https://doi.org/10.1016/j.socscimed.2005.01.015>.
- Zwiers, M., Ham, M., Van, Manley, D., 2018. Trajectories of ethnic neighbourhood change : spatial patterns of increasing ethnic diversity. *Popul. Space Place* 24, 1–11. <https://doi.org/10.1002/psp.2094>.