Article

Beyond the Individual: Evidence Linking Neighborhood Trust and Social Isolation Among Community-Dwelling Older Adults

Jie Yang[1] [iD] **and Sara M. Moorman[2]**

Abstract
Loneliness and social isolation are significant public health problems. However, the community and neighborhood factors that contribute to this pandemic are less examined. Adopting a neighborhood resource-based social capital theory, we examined whether neighborhood trust was associated with older Americans' loneliness, number of friends, and perceived support from friends. We analyzed two waves of longitudinal data from the Health and Retirement Study, with a sample of 5,817 Americans aged 50 years and older. We used first difference models to analyze the data and controlled for potential confounders including perceived support from family and health status. Increases in the perception that neighbors are trustworthy and helpful were associated with statistically significant decreases in loneliness and increases in perceived social support from friends over a 4-year period. Findings have implications for conceptualizing social capital and for potential interventions targeting interpersonal trust and reducing loneliness and social isolation.

Keywords

[1]School of Social Work, College of Health and Human Performance, East Carolina University, Greenville, NC, USA
[2]Department of Sociology, Institute on Aging, Boston College, Chestnut Hill, MA, USA
Corresponding Author:
Jie Yang, East Carolina University, 115 Rivers Building, Mailstop 505, Greenville, NC 27858, USA.
Email: yangji18@ecu.edu

In 1995, an unusual heat wave hit Chicago and led to 739 heat-related deaths (Dematte et al., 1998). The decedents were primarily older adults who lived alone, and among them, African American older adults were considerably over-represented. In his multi-method *social autopsy* of the heat wave, Eric Klinenberg (2002) identified a lack of social cohesion as a key factor that led to the unusually large number of heat-related deaths in some neighborhoods. Social cohesion, or trust, is "An expectation that people will behave with good will, that they intend to honor their commitments and avoid harming others" (Glanville & Paxton, 2007, p. 231). In the heat wave, many older adults who lived alone refused to open the door for fear of strangers, even when the strangers were volunteers trying to provide help (Klinenberg, 2002).

Klinenberg's analysis was significant in part because social trust has been declining in the United States in recent decades. Respondents to the General Social Survey (GSS) increasingly disbelieve that most people can be trusted (Clark, 2014). This finding holds after controlling for both economic inequality and individual-level demographic characteristics and socioeconomic status. Scholars believe that distrust of others puts people at high risk of loneliness and social isolation (Moore et al., 2011). Social isolation is the objective state of lacking social contact and relationships, whereas loneliness is the subjective state of perceived social isolation (Newall & Menec, 2017; Nicholson, 2009; Tomaka, Thompson, & Palacios, 2006). For example, Klinenberg (2002) discussed the *culture of fear* that permeated the urban African American neighborhoods in Chicago and how residents in these neighborhoods chose to isolate themselves as a strategy to avoid violence and victimization. Indeed, the neighborhood is a fruitful context for studying the association between trust and social isolation, because it is the site where many older adults both center their social networks (e.g., Gardner, 2011) and derive their beliefs about the trustworthiness of strangers (Glanville & Paxton, 2007).

Social isolation and loneliness among older adults are gradually coming to be considered to be significant U.S. public health problems, due to their marked effects on morbidity and mortality (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Valtorta, Kanaan, Gilbody, Ronzi, & Hanratty, 2016), and to their prevalence. National survey data show that over one third of midlife and older Americans (age 45+) feel lonely (AARP, 2010). Over the 20-year period from 1985 to 2004, mean network size for adults (18+) decreased by about a third (one confidant), from 2.94 confidantes to 2.08 confidantes (McPherson, Smith-Lovin, & Brashears, 2006). From the perspective of human development, insofar as a common social goal of older adults is to use their relationships to maximize emotional meaning in life, older adulthood may be a period of the life course in which loneliness and social isolation are especially detrimental (Carstensen, Fung, & Charles, 2003).

Despite numerous studies examining the risk and protective factors for social isolation among older adults, few have focused on factors at the neighborhood or community levels. In addition, it is widely recognized that there is a need for further research into methods of reducing loneliness (Ferguson, 2011). Therefore, adopting a neighborhood resource-based theory of social capital, we ask the question: Is neighborhood trust associated with older Americans' loneliness, nonfamily social network size, and perceived social support from friends? We investigate this question in a sample of 5,817 participants from two waves of the Health and Retirement Study (HRS) using first difference models. Findings from our study imply that enhancing interpersonal trust may be an effective response to loneliness and social isolation among community-dwelling older adults.

Neighborhood Resource-Based Theory of Social Capital

We adopted a trust-as-antecedent model of social capital which pertains to the neighborhood (Carpiano, 2006). Carpiano's neighborhood resource-based theory of social capital has integrated two traditions of conceptualizing and theorizing about social capital—from Bourdieu (1986) and Putnam (1995)—to understand neighborhood conditions and processes as determinants of health. Carpiano's theory begins with local socioeconomic conditions, such as the affordability of homes and the availability of good jobs. These factors structure possibilities for social cohesion or trust among neighbors, which then influence social capital. Social capital is the idea that formal and informal relationships among people carry resources, either realized or potential, that individuals can use to better their health (Moore & Kawachi, 2017). In Carpiano's theory, social capital includes elements such as social support, participation in civic organizations, informal social control, and social leverage. Consequently, social capital influences individuals' health behaviors and eventually, their health status.

This article emphasizes one portion of the theory, the link between trust among neighbors and social capital. Measures of social capital overlap with measures of social isolation, such as social network size, and with measures of loneliness, such as perceived social support. For example, the GSS operationalizes social capital through three dimensions—informal association (frequency of spending time with neighbors, friends, and relatives), formal association (volunteering), and trust (Clark, 2014). Similarly, researchers often operationalize social isolation as social network size and frequency of social contact (Holt-Lunstad et al., 2015; Lubben, Gironda, Sabbath, Kong, & Johnson, 2015) and loneliness as perceiving a lack of companionship and social support (Hughes, Waite, Hawkley, & Cacioppo, 2004).

Trust as an Antecedent of Social Capital and Social Isolation

Carpiano's (2006) theory identifies social cohesion specifically as an *antecedent* of social capital. This placement is significant in two ways. First, other scholars theorize that social cohesion is an integral element of social capital. Theorists in the tradition of Coleman (1988) and Putnam (1995) consider trust to be an essential element of social capital, whereas theorists in the tradition of Bourdieu (1986) argue that trust is an antecedent of social capital (Carpiano, 2006). Empirically, a body of literature has provided evidence suggesting that trust is a distinct concept from the network aspect of social capital (Carpiano & Fitterer, 2014; Garoon, Engelman, Gitlin, & Szanton, 2016; Moore et al., 2011). For example, analyzing the 2008 Canadian GSS data, Carpiano and Fitterer (2014) found that generalized trust and trust of neighbors were modestly associated with measures of several domains of network-based social capital.

Second, other scholars agree that cohesion and trust are distinct constructs, but theorize that social cohesion is a *consequence* of social capital. For example, an affluent neighborhood can offer both physical security and abundant community programs that facilitate communications among neighbors. Therefore, people in these neighborhoods may have a higher sense of trust as compared to people in other neighborhoods. Using panel data from the GSS, Glanville et al. (2013) found that frequent interactions with friends, neighbors, family, group members, and other nonkin enhanced trust. It is likely that the relationship between social capital and trust is bidirectional; however, in this article, we focus on neighborhood trust as an antecedent of capital adopting neighborhood resource-based social capital theory to examine the social determinants of loneliness and social isolation among older adults.

There is a vast literature on the correlates of loneliness and social isolation, but little of it has concerned neighborhood trust. Regarding loneliness, we know of two studies focusing on neighborhoods, both of which suggest that lonely people lack trust in their neighbors. Using a sample from Western Finland, Nyqvist, Victor, Forsman, and Cattan (2016) found that low levels of trust and a weak sense of neighborhood belonging were associated with greater loneliness among people aged 50 to 80 years old. Although Bromell and Cagney (2014) did not use the term *loneliness*, they measured a related construct, perceived companionship, among older adults in the Chicago area. They found that neighborhood trust was associated with increased perceived companionship among older adults living alone, but not among older adults who lived with others.

Similarly, a small number of studies have examined associations between social trust at the neighborhood level and social isolation. Analyzing an Australian sample of 522 older adults, Windsor, Fiori, and Crisp (2012) found that higher perceived neighborhood cohesion was associated with more extensive networks of family, neighbors, and friends. In another study of X,

older adults who perceived low neighborhood cohesion also participated less in informal organizations and engaged in less frequent social contact with friends and family (Latham & Clarke, 2018). This literature suggests that people with low social trust are at risk of experiencing various forms of social isolation, or vice versa.

The Current Study

This study adds empirical evidence toward the trust-as-antecedent model of social capital/social isolation. Our study examines whether change over time in neighborhood trust is related to decreases in older adults' loneliness, increases in number of friends, and increases in perceived social support from friends. We chose number of friends as a measure of social capital in addition to loneliness because friends are a primary, voluntary source of emotional support for older adults, while family relationships are both more obligatory and more likely to include strain as well as support (Quadagno, 2008). We chose perceived social support from friends as well, given evidence that quality of relationships, rather than network size, may better indicate social engagement versus isolation among older adults (Carstensen, Isaacowitz, & Charles, 1999). The longitudinal design has the advantage of examining change within individuals. Our models adjust for potential time-varying confounds, including health status, personality, and demographic characteristics (Glanville & Paxton, 2007; Hensley et al., 2012). We anticipate that increases in neighborhood trust are associated with reductions in loneliness and increases in number of friends and perceived support from those friends.

Methods

Data

We used two waves (2010/2014) of data from the HRS, a biennial in-person interview of a representative sample of adults over the age of 50 in the United States, with an oversample of African Americans, Hispanics, and Florida residents (for a detailed introduction to the HRS, see Juster & Suzman, 1995). The spouses of married persons were also recruited into the study, regardless of their age. Since 2006, a rotating, random 50% of the respondents who completed the in-person interview have been left with a leave-behind psychosocial and lifestyle questionnaire (LBQ), which contains key variables used in our models. Thus, longitudinal data are available at 4-year intervals: The 2010 wave provided the first longitudinal psychosocial data from the 2006 participants, and the 2014 data provided a follow-up. Because one of our outcome measures, loneliness, was measured differently in 2006 (with three items) versus 2010 and 2014 (with 11 items), we chose to use only the 2010 and 2014 waves of

data for our analysis. Similar to the in-person interviews of the HRS, the LBQ also had a response rate of over 80% (Smith et al., 2013). There were 6,148 participants who completed an LBQ in both 2010 and 2014. We excluded participants who were interviewed because they were spouses of other participants, but were under 50 years and therefore not in the target population of the HRS ($n = 331$). Our final sample size was 5,817 participants.

Measures

Loneliness and social isolation. Loneliness was measured by 11 items of the UCLA loneliness scale (Hughes et al., 2004). One example item read "How much of the time do you feel you lack companionship?" The responses included *often* (3), *some of the time* (2), and *hardly ever or never* (1). We averaged the scores (Cronbach's alpha at each wave: .88) such that higher values indicated greater loneliness. Social isolation was measured as number of friends and perceived social support from friends. Number of friends was a continuous measure of the number of nonrelatives with whom respondents perceived having a close relationship. We top-coded those who had more than 20 close friends. We assigned a score of 0 to those who did not have any friends ($n = 644$ in 2010; $n = 773$ in 2014). Perceived social support from friends was measured by seven items (Cohen, 2004; Uchino, 2009). One example item read "How much do they really understand the way you feel about things?" The responses included *a lot* (4), *some* (3), *a little* (2), and *not at all* (1), such that higher values indicated more perceived support. The items were averaged (Cronbach's alpha at each wave: .70).

Independent variable. Neighborhood trust was a four-item scale asking to what degree respondents agreed with the following statements: I feel part of this area; most people in this area can be trusted; people are friendly; and people will help you (Mendes de Leon et al., 2009). The response scale ranged from 1 to 7, with a higher score representing greater trust. One item was reverse-coded, and scores were averaged (alpha at each wave: .86).

Control variables. Perceived support from family members may be a potential confounder, because people may rely on family support in the absence of friend support (Grace & Schill, 1986; Pinquart & Sorensen, 2001). Similar to perceived support from friends, both perceived support from children and perceived support from spouse/partner were seven-item scales (Cohen, 2004; Uchino, 2009). The responses included *a lot* (4), *some* (3), *a little* (2), and *not at all* (1), such that higher values indicate more perceived support. Each scale was averaged. The value of Cronbach's alpha for perceived support from children was .80 for 2010 and .81 for 2014. We assigned a score of 0 to those who did not have any children ($n = 623$ in 2010; $n = 646$ in 2014). The value of

Cronbach's alpha for perceived support from spouses/partners was .83 for both 2010 and 2014. We assigned a score of 0 to those who did not have a spouse/partner ($n = 1,791$ in 2010; $n = 1,953$ in 2014).

We also controlled for functional health status, which is often found to be associated with perceived social isolation and loneliness (Pinquart & Sorensen, 2001). HRS measured instrumental activities of daily living with five yes/no items asking whether respondents had any difficulty in using the phone, managing money, taking medications, shopping for groceries, and preparing hot meals. We summed the number of activities with which the participant identified problems, such that the scale ranged from 0 to 5. We further controlled for neuroticism and extroversion using the two Big-5 personality scales (Lachman & Weaver, 1997). Previous research identifies strong associations between loneliness and personality traits such as neuroticism or extraversion (Butkovic, Brkovic, & Bratko, 2012). The items (four for neuroticism and five for extroversion) in each scale asked to what extent respondents agreed with adjectives describing their personality. The responses included *a lot* (1), *some* (2), *a little* (3), and *not at all* (4). Each scale was averaged after some items were reverse-coded (Cronbach's alpha: .71 for neuroticism in both waves; .75 and .76 for extroversion in 2010 and 2014, respectively). Higher scores indicate a higher degree of neuroticism or extroversion.

Finally, we controlled for income—representing socioeconomic status—and marital status due to their previously identified associations with loneliness and social isolation (Pinquart & Sorensen, 2001). Total household income was the sum of income from respondents and their spouses/partners. We chose total household income because a significant portion of our sample was in the paid labor force. For a sensitivity analysis to consider retirees, we tested total household wealth, and the results were not significantly changed. Marital status was five dichotomous indicators, including married/partnered (reference group), married but spouse absent (spouse institutionalized), separated/divorced, widowed, and single.

Analytic Strategy

We used the HRS 2010 person-level analysis weights in calculating both descriptive statistics and regression analyses. Person-level weights adjust for complex design features and stratification, oversampling of certain groups of minority older adults, and nonresponse. For multivariate analyses, we first examined missing patterns and found that older people tended to have more missing values. The total percentage of missing was 13.8% across all outcomes. We conducted multiple imputation by chained equations to handle missing values. However, because the imputed results were very similar to the results from analyses using listwise deletion, we report the results from analyses using listwise deletion. Ordinary least squares regression without imputation also allows us to

adopt analysis weights and obtain robust standard errors and standardized coefficients at the same time for a straightforward interpretation.

We used first difference modeling for multivariate analyses. When using two waves of data, first difference modeling is identical to fixed effects modeling (Allison, 2009). A first difference model takes the following form:

$$Y2j - Y1j = (\alpha j - \alpha j) + \beta 1(X2j1 - X1j1) + \beta 2(X2j2 - X1j2) + \ldots + \beta n$$
$$(X2jn - X1jn)$$

where $Yj2$ and $Yj1$ are the outcomes at Waves 1 and 2, respectively, for person j, αj captures the influence of unobserved factors related to person j that do not change over the 4-year period, and $X2jn$ and $X1jn$ denote the values of observed factors for Waves 1 and 2 for person j. A feature of this modeling strategy is that it subtracts away the effects of both observed and unobserved variables that do not change over time; that is, only changes in other variables (e.g., neighborhood social cohesion) can account for changes in loneliness, number of friends, and social support from friends. Change scores were obtained for all continuous variables. Stability in or transition from marital status was coded to create the change in the marital status variable. We adopted robust standard errors to control for clustering within a household (i.e., spouses over 50 years) and heteroscedasticity problems. For diagnostics, we examined the normality of residuals, multivariate linearity, and multicollinearity. No violation was detected. In addition, we examined the regression to the mean (RTM) effect of all outcomes adopting a recently developed Stata module to assess RTM (Linden, 2013). Results showed that there was an RTM effect on our outcome measures. When analyzing observational data, adding a lagged dependent variable (LDV) adjusts for this effect (Imbens & Wooldridge, 2009; Linden, 2013). We show results with and without the inclusion of the LDV to indicate the range of estimates of the true value.

Results

Table 1 presents weighted descriptive statistics, including the extent to which average values changed over the 4-year period. On the scale from 1 to 3 where 3 represented the highest loneliness, respondents averaged 1.51 ($SD = 0.44$) in 2010 and 1.53 ($SD = 0.44$) in 2014. Respondents had slightly more than three close friends at each wave. On a scale of 0 to 4 where 4 represented the highest perceived support from friends, respondents averaged 3.13 ($SD = 0.94$) in 2010 and 3.11 ($SD = 0.99$) in 2014. On the scale from 1 to 7 where 7 represented the highest trust, respondents averaged 5.53 ($SD = 1.29$) in 2010 and 5.47 (1.31) in 2014. Although the aggregate means of these key variables were relatively stable across the two waves, there was significant intraindividual variability. For example, the interwave difference score for neighborhood trust ranged from -6 to 6 with a standard deviation of 1.39. The difference variables in the model had low

Table 1. Weighted Descriptive Statistics, 2010–2014 Health and Retirement Study (N = 5,817).

	2010 Mean (*SD*) or %	2014 Mean (*SD*) or %	Change scores Mean (*SD*) or %
Outcomes			
Loneliness (scale)	1.51 (.44)	1.53 (0.44)	.02 (.37)
Number of friends	3.75 (3.52)	3.67 (3.08)	−.16 (3.39)
Perceived friends' support (scale)	3.13 (.94)	3.11 (0.99)	−.06 (1.04)
Neighborhood perception			
Neighborhood trust (scale)	5.53 (1.29)	5.47 (1.31)	−.08 (1.40)
Perceived support with family members			
Perceived support from child (scale)	2.82 (1.20)	2.84 (1.23)	.02 (.78)
Perceived support from spouse/partner (scale)	2.30 (1.56)	2.32 (1.60)	−.10 (1.01)
Health			
Instrumental activities of daily living	.16 (.58)	.25 (.73)	.08 (.64)
Personality			
Neuroticism (scale)	2.02 (.61)	1.98 (.61)	−.04 (.52)
Extraversion (scale)	3.17 (.56)	3.16 (.58)	−.02 (.43)
Demographic characteristics			
Marital status			
Married/partnered (ref. group)	69.2	65.7	92.6
Married, spouse absent	0.78	0.42	3.9
Divorced/separated	12.8	13.1	0.5
Widowed	11.3	15	1.7
Never married	5.92	5.71	1.3
Total household income	78,739 (89,138)	82,567 (130,750)	2,715 (88,080)

to moderate intercorrelations. The strongest correlation was 0.22 ($p < .001$), between change in number of friends and change in perceived support from friends.

Table 2 presents weighted first difference model results with fully standardized coefficients. Models 1a, 2a, and 3a present results without including the LDV, whereas Models 1b, 2b, and 3b present results that do include the LDV. The results were consistent across the a and b models, with one exception: The association between change in trust and change in number of friends was statistically significant in Model 2a ($p < .05$) and became marginally significant in Model 2b ($p = .08$). Below, we interpret the more conservative results from Models 1b, 2b, and 3b.

As hypothesized, after controlling for change in potential confounders, an increase in neighborhood trust was significantly associated with decreased loneliness ($\beta = −.10$, $p < .001$), meaning that one standard deviation increase in

Table 2. Weighted First Difference Modeling Results With Robust Standard Errors and Standardized Coefficients.

	Model 1a Change in loneliness (Beta)	Model 1b Change in loneliness (Beta)	Model 2a Change in number of friends (Beta)	Model 2b Change in number of friends (Beta)	Model 3a Change in perceived support from friends (Beta)	Model 3b Change in perceived support from friends (Beta)
Lagged dependent variable						
Loneliness	—	−0.38***	—	—	—	—
Number of friends	—	—	—	−0.58***	—	—
Perceived support from friends	—	—	—	—	—	−0.46***
Neighborhood perception						
Change in neighborhood trust	−0.12***	−0.10***	0.04*	0.02+	0.04**	0.04*
Perceived support from family						
Change in perceived support from children	−0.03	−0.02	0.00	−.00	0.05*	0.04*
Change in perceived support from spouse/partner	−0.20***	−0.16***	0.01	0.01	0.06*	0.04+
Personality						
Change in neuroticism	0.15***	0.13***	−0.02	−0.02	−0.01	−0.01
Change in extraversion	−0.16***	−0.14***	0.06***	0.04**	0.04+	0.03
Health						
Instrumental activities of daily living	−0.01	0.00	−0.01	−0.01	−0.02	−0.03
Demographics						
Change in household income	0.01	0.01	0.03	0.02	0.00	.01
Change in marital status (base group: no change)						
Married to widowed	−0.06**	−0.05**	0.02	0.02	0.02	0.02
Widowed to married	0.00	0.01	−0.01	−0.01	−0.02*	−0.01
Married to divorced/separated	−0.05	−0.02	0.02	−0.01	0.00	−0.01
Divorced/separated to married	0.03	0.03*	−0.01	−0.00	−0.05**	−0.03*
N	5,272	5,272	5,078	5,078	5,209	5,209

Note. The "b" models include a lagged dependent variable to adjust for regression to the mean.
+p < .1. *p < .05. **p < .01. ***p < .001.

10

neighborhood trust was associated with a decrease of 1/10 of a standard deviation in loneliness. Furthermore, an increase in neighborhood trust was significantly associated with increases in perceived support from friends ($\beta = .04$, $p < .05$).

Discussion

In a sample of older Americans, we found that change in someone's perception of their neighbors as trustworthy was associated with a change in their loneliness level perceived social support from friends across a 4-year interval. (Initially, changes in trust of neighbors were also associated with change in number of friends, but this result may have been due to RTM.) Using first-difference models reduced the impact of potential unobserved confounders, which gives us confidence in the associations. Particularly for loneliness, the effect size was one tenth of a standard deviation, which was comparable to the effect size of perceived support from spouse/partner. This suggests that social trust may play an important role in levels of social isolation and loneliness among older adults. These empirical results lend support to a social capital model in which trust is related to, but distinct from, social capital (Carpiano, 2006). They also lend support to the idea that older adults show agency in shaping their social networks. That is, they are not lonely or isolated because of unpreventable losses of network members, but rather because they choose to affiliate or isolate depending on their perceptions of possibilities for relationships (Carstensen et al., 1999). Although the neighborhood resource-based social capital theory did not spell out the mechanism of how social trust may lead to social connectedness, the influence of social trust may be channeled through the enhanced social contact with neighbors. Having a trusting relationship with one's neighbors may lead to one's openness about engaging in different community organizations or activities. Therefore, new friendship can be formed, thus social isolation reduced.

Our findings also contribute to the literature on social and environmental determinants of social isolation. As we discussed earlier, although many individual-level risk and protective factors for social isolation have been identified, aspects of the social environment such as neighborhood cohesion/trust have been examined much less, particularly using longitudinal data. Discovering social and environmental risk and protective factors is crucial because such research directly influences the level upon which interventions are developed. Current interventions targeting social isolation and loneliness among older adults have been largely focused on individuals and small groups, using strategies such as improving social skills and increasing physical activity (Gardiner, Geldenhuys, & Gott, 2018; Masi, Chen, Hawkley, & Cacioppo, 2011). However, the efficacy of many of these interventions is not

well supported by evidence (Cattan, White, Bond, & Learmouth, 2005; Gardiner et al., 2018).

A broader conceptual problem is that individual-level interventions place responsibility for solving social isolation and loneliness with the individual. By extension, individuals are to blame for their own isolation. Indeed, cognitive behavior therapy, a common treatment for mental illness, has been adopted to treat loneliness (Masi et al., 2011). This type of intervention may blind society from understanding that social isolation and loneliness are community-level problems with environmental solutions. In addition, individual-level interventions assist one person at a time, whereas environment-level interventions have the potential to reach larger groups of people for the same cost. As public health problems such as smoking and obesity have been treated effectively with interventions at the community level (Swinburn, Egger, & Raza, 1999; Trickett et al., 2011), community level intervention might also alleviate loneliness and social isolation among older adults.

Therefore, a meso-level intervention targeting neighborhood trust might reduce loneliness and social isolation. First, research has established that interpersonal trust is context-dependent and alterable (Maddux & Brewer, 2005), and that it is the product of experience with social environments more so than it is a fixed trait (Glanville & Paxton, 2007). People feel trust in some settings and not others, but is trust best enhanced when people switch environments or when they alter environments? For example, an individual's level of trust may change if they leave behind an old neighborhood and move to a new one. However, moving is not a viable option for many people, especially if neighborhoods in which people enjoy high levels of trust are wealthy neighborhoods with expensive housing (Ross, Mirowsky, & Pribesh, 2001). Besides, aging in place, meaning remaining in one's community while experiencing age-related disability, has been gaining in popularity among older adults (Wiles, Leibing, Guberman, Reeve, & Allen, 2012). Therefore, for most people, enhancing trust would necessarily involve alterations to the current neighborhood, rather than a transplant to a new one.

The neighborhood resource-based theory of social capital posits that neighborhood conditions directly influence neighborhood cohesion and consequently social capital (Carpiano, 2006). Therefore, a community development perspective to reduce social isolation among older adults should ring a bell for interventionists. Enhancing neighborhood conditions such as the availability of good jobs may lead to enhanced neighborhood cohesion that could potentially reduce social isolation. Interventions to enhance neighborhood trust may be more difficult to design and implement, yet effective. Social theory suggests that an effective intervention may be one designed to take advantage of the developmental goal of maximizing emotional meaning in older adulthood (Carstensen et al., 2003). That is, if older adults perceived that there would be meaningful

relationships to be gained from engaging in a community initiative, they might be readily responsive to the intervention (Löckenhoff & Carstensen, 2004).

An applicable approach may be to promote volunteering activities among community-dwelling older adults, because purpose and meaning seeking is often found to be one of the most salient motivations for volunteering among older adults (Elliott, Kao, & Grant, 2004; Thoits, 2012). Volunteering has also been found to be associated with enhanced mental and physical well-being among older adults (Morrow-Howell, 2010). In a similar vein, any community activity programs such as support groups and physical activities programs may potentially enhance older adults' contact with neighbors and therefore reduce their social isolation. In fact, many such programs are found to have an effect on reducing social isolation among older people (Dickens, Richards, Greaves, & Campbell, 2011).

Finally, despite the potential benefit of enhancing neighborhood trust, we need to caution that trusting neighbors, who are many times strangers, may not be optimal for older adults under certain conditions. For example, in Klinenberg's (2002) study, many of the African American older adults who died due to excessive heat lived in neighborhoods with high violent crime rates, and further trust in neighbors may have been misplaced. As Garoon et al. (2016) pointed out in their study, "mistrust and disengagement can be justifiable and productive adaptive responses to socially challenging experiences and environments" (p. 65). A community trust intervention would only work when neighborhood safety is guaranteed. Any community-level interventions targeting neighborhood trust should take into consideration place-specific environmental conditions.

Limitations and Future Research

This study contains several limitations. First, this study design cannot rule out the possibility of reverse causation, and some empirical literature suggests that social capital produces trust (e.g., Glanville et al., 2013). Our hypothesis was theory-driven, and future empirical research could examine the mechanisms by which trust might enhance social capital. Carpiano (2006) describes trust as a basis for social networks and social support, but trust may not be a sufficient condition for social capital to develop. Neighborhood residents may also need motivation in the form of shared goals or interests, for example (McBride, Sherraden, & Pritzker, 2006). Second, we used two waves of longitudinal data due to data availability issues. More observations over a longer period would make for a better examination of more significant change and longer term effects. Third, HRS lacks neighborhood-level data such as variables measuring neighborhood stability, nor does HRS have individual-level information on how long participants have lived in their current residence. Thus, our results may be subject to confounding as moving to a new neighborhood may well affect one's

levels of trust and loneliness as well as number of friends. Including measures from multiple ecological levels would enhance validity and reliability. Fourth, the social support scale has relatively low reliability which may lead to bias due to measurement error. However, the first difference model handles measurement errors that persist over time better than other two-wave data modeling such as the lagged dependent approach (Liker, Augustyniak, & Duncan, 1985). Last but not least, future research may explore racial and ethnic differences as racial/ethnic residential segregation persists in the United States, and neighborhood conditions could differ much among different racial and ethnic groups.

Conclusion

Analyzing two waves of longitudinal data from a national representative sample of 5,817 older Americans, we found that whether someone perceives their neighbors as trustworthy is related to their loneliness level and social support from friends across a 4-year interval. The findings from our study call for the development of community-level interventions that target social cohesion/trust.

Declaration of Conflicting Interests

Funding

ORCID iD

Jie Yang ⓘ https://orcid.org/0000-0002-1222-2909

References

AARP. (2010). *Loneliness among older adults: A national survey of adults 45+*. Retrieved from https://assets.aarp.org/rgcenter/general/loneliness_2010.pdf

Allison, P. D. (2009). *Fixed effects regression models*. Thousand Oaks, CA: SAGE.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). New York, NY: Greenwood.

Bromell, L., & Cagney, K. A. (2014). Companionship in the neighborhood context: Older adults' living arrangements and perceptions of social cohesion. *Research on Aging*, *36*(2), 228–243. doi:10.1177/0164027512475096

Butkovic, A., Brkovic, I., & Bratko, D. (2012). Predicting well-being from personality in adolescents and older adults. *Journal of Happiness Studies*, *13*(3), 455–467. doi:10.1007/s10902-011-9273-7

Carpiano, R. M. (2006). Toward a neighborhood resource-based theory of social capital for health: Can Bourdieu and sociology help? *Social Science & Medicine*, *62*(1), 165–175. doi:10.1016/j.socscimed.2005.05.020

Carpiano, R. M., & Fitterer, L. M. (2014). Questions of trust in health research on social capital: What aspects of personal network social capital do they measure? *Social Science & Medicine*, *116*, 225–234. doi:10.1016/j.socscimed.2014.03.017

Carstensen, L. L., Fung, H. H., & Charles, S. T. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion*, *27*(2), 103–123. doi:10.1023/A:1024569803230

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*(3), 165. doi:10.1037/0003-066X.54.3.165

Cattan, M., White, M., Bond, J., & Learmouth, A. (2005). Preventing social isolation and loneliness among older people: A systematic review of health promotion interventions. *Ageing & Society*, *25*(1), 41–67. doi:10.1017/s0144686x04002594

Clark, A. K. (2014). Rethinking the decline in social capital. *American Politics Research*, *43*(4), 569–601. doi:10.1177/1532673x14531071

Cohen, S. (2004). Social relationships and health. *American Psychologist*, *59*, 676–684.

Coleman, J. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, *94*, S95–S120. Retrieved from http://www.jstor.org/stable/2780243

Dematte, J. E., O'mara, K., Buescher, J., Whitney, C. G., Forsythe, S., McNamee, T., ... Ndukwu, I. M. (1998). Near-fatal heat stroke during the 1995 heat wave in Chicago. *Annals of Internal Medicine*, *129*(3), 173–181. doi:10.7326/0003-4819-129-3-199808010-00001

Dickens, A. P., Richards, S. H., Greaves, C. J., & Campbell, J. L. (2011). Interventions targeting social isolation in older people: A systematic review. *BMC Public Health*, *11*(1), 647. doi:10.1186/1471-2458-11-647

Elliott, G., Kao, S., & Grant, A. M. (2004). Mattering: Empirical validation of a social-psychological concept. *Self and Identity*, *3*(4), 339–354. doi:10.1080/13576500444000119

Ferguson, L. (2011). The campaign to end loneliness. *Working with Older People*, *15*(2), 66–70. doi:10.1108/13663661111144772

Gardiner, C., Geldenhuys, G., & Gott, M. (2018). Interventions to reduce social isolation and loneliness among older people: An integrative review. *Health & Social Care in the Community*, *26*(2), 147–157. doi:10.1111/hsc.12367

Gardner, P. J. (2011). Natural neighborhood networks—Important social networks in the lives of older adults aging in place. *Journal of Aging Studies*, *25*(3), 263–271. doi:10.1016/j.jaging.2011.03.007

Garoon, J., Engelman, M., Gitlin, L., & Szanton, S. (2016). Where does the neighborhood go? Trust, social engagement, and health among older adults in Baltimore City. *Health & Place*, *41*, 58–66. doi:10.1016/j.healthplace.2016.07.002

Glanville, J. L., Andersson, M. A., & Paxton, P. (2013). Do social connections create trust? An examination using new longitudinal data. *Social Forces*, *92*(2), 545–562. doi:10.1093/sf/sot079

Glanville, J. L., & Paxton, P. (2007). How do we learn to trust? A confirmatory tetrad analysis of the sources of generalized trust. *Social Psychology Quarterly*, *70*(3), 230–242. doi:10.1177/019027250707000303

Grace, G. D., & Schill, T. (1986). Social support and coping style differences in subjects high and low in interpersonal trust. *Psychological Reports*, *59*(2), 584–586. doi:10.2466/pr0.1986.59.2.584

Hensley, B., Martin, P., Margrett, J. A., MacDonald, M., Siegler, I. C., Poon, L. W., . . . Arnold, J. (2012). Life events and personality predicting loneliness among centenarians: Findings from the Georgia Centenarian Study. *The Journal of Psychology*, *146*(1–2), 173–188. doi:10.1080/00223980.2011.613874

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, *10*(2), 227–237. doi:10.1177/1745691614568352

Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging*, *26*(6), 655–672. doi:10.1177/0164027504268574

Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. *Journal of Economic Literature*, *47*(1), 5–86. doi:10.1257/jel.47.1.5

Juster, F. T., & Suzman, R. (1995). An overview of the health and retirement study. *Journal of Human Resources*, *30*, S7–S56. doi:10.2307/146277

Klinenberg, E. (2012). *Heat wave: A social autopsy of disaster in Chicago*. Chicago, IL: University of Chicago Press.

Lachman, M. E., & Weaver, S. L. (1997). *Midlife Development Inventory (MIDI) personality scales: Scale construction and scoring* (Unpublished Technical Report). Brandeis University, Waltham, MA. Retrieved from http://www.brandeis.edu/projects/lifespan/scales.html

Latham, K., & Clarke, P. J. (2018). Neighborhood disorder, perceived social cohesion, and social participation among older Americans: Findings from the National Health & Aging Trends Study. *Journal of Aging and Health*, *30*(1), 3–26. doi:10.1177/0898264316665933

Liker, J. K., Augustyniak, S., & Duncan, G. J. (1985). Panel data and models of change: A comparison of first difference and conventional two-wave models. *Social Science Research*, *14*(1), 80–101. doi:10.1016/0049-089X(85)90013-4

Linden, A. (2013). Assessing regression to the mean effects in health care initiatives. *BMC Medical Research Methodology*, *13*(1), 119. doi:10.1186/1471-2288-13-119

Löckenhoff, C. E., & Carstensen, L. L. (2004). Socioemotional selectivity theory, aging, and health: The increasingly delicate balance between regulating emotions and making tough choices. *Journal of Personality*, *72*(6), 1395–1424. doi:10.1111/j.1467-6494.2004.00301.x

Lubben, J., Gironda, M., Sabbath, E., Kong, J., & Johnson, C. (2015). Social isolation presents a grand challenge for social work. *Grand challenges for social work initiative*. Working Paper No. 7.

Maddux, W. W., & Brewer, M. B. (2005). Gender differences in the relational and collective bases for trust. *Group Processes & Intergroup Relations*, *8*(2), 159–171. doi:10.1177/1368430205051065

Masi, C. M., Chen, H. Y., Hawkley, L. C., & Cacioppo, J. T. (2011). A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review*, *15*(3), 219–266. doi:10.1177/1088868310377394

Mendes de Leon, C. F., Cagney, K. A., Bienias, J. L., Barnes, L. L., Skarupski, K. A., Scherr, P. A., & Evans, D. A. (2009). Neighborhood social cohesion and disorder in relation to walking in community-dwelling older adults: a multilevel analysis. *Journal of Aging and Health*, *21*(1), 155–171. Retrieved from https://doi.org/10.1177/0898264308328650

McBride, A. M., Sherraden, M. S., & Pritzker, S. (2006). Civic engagement among low-income and low-wealth families: In their words. *Family Relations*, *55*, 152–162. doi:10.1111/j.1741-3729.2006.00366.x

McPherson, M., Smith-Lovin, L., & Brashears, M. E. (2006). Social isolation in America: Changes in core discussion networks over two decades. *American Sociological Review*, *71*(3), 353–375. doi:10.1177/000312240807300610

Moore, S., Bockenholt, U., Daniel, M., Frohlich, K., Kestens, Y., & Richard, L. (2011). Social capital and core network ties: A validation study of individual-level social capital measures and their association with extra-and intra-neighborhood ties, and self-rated health. *Health & Place*, *17*(2), 536–544. doi:10.1016/j.healthplace.2010.12.010

Moore, S., & Kawachi, I. (2017). Twenty years of social capital and health research: A glossary. *Journal of Epidemiology and Community Health*, *71*, 513–517. doi:10.1136/jech-2016-208313

Morrow-Howell, N. (2010). Volunteering in later life: Research frontiers. *The Journals of Gerontology: Series B*, *65*(4), 461–469. doi:10.1093/geronb/gbq024

Newall, N. E., & Menec, V. H. (2017). Loneliness and social isolation of older adults: Why it is important to examine these social aspects together. *Journal of Social and Personal Relationships, 36*(3), 925–939.

Nicholson, N. R., Jr. (2009). Social isolation in older adults: An evolutionary concept analysis. *Journal of Advanced Nursing*, *65*(6), 1342–1352. doi:10.1111/j.1365-2648.2008.04959.x

Nyqvist, F., Victor, C., Forsman, A., & Cattan, M. (2016). The association between social capital and loneliness in different age groups: A population-based study in Western Finland. *BMC Public Health*, *16*, 542. doi:10.1186/s12889-016-3248-x

Pinquart, M., & Sorensen, S. (2001). Influences on loneliness in older adults: A meta-analysis. *Basic and Applied Social Psychology*, *23*(4), 245–266. doi:10.1207/153248301753225702

Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, *6*(1), 65–78. doi:10.1007/978-1-349-62965-7_12

Quadagno, J. (2008). *Aging and the life course: An introduction to social gerontology* (5th ed.). Boston, MA: McGraw Hill.

Ross, C. E., Mirowsky, J., & Pribesh, S. (2001). Powerlessness and the amplification of threat: Neighborhood disadvantage, disorder, and mistrust. *American Sociological Review*, *66*(4), 568–591. doi:10.2307/3088923

Smith, J., Fisher, G., Ryan, L., Clarke, P., House, J., & Weir, D. (2013). *Psychosocial and Lifestyle Questionnaire 2006–2010: Documentation Report*. Retrieved from http://hrsonline.isr.umich.edu/sitedocs/userg/HRS2006-2010SAQdoc.pdf

Swinburn, B., Egger, G., & Raza, F. (1999). Dissecting obesogenic environments: The development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Preventive Medicine*, *29*(6), 563–570. doi:10.1006/pmed.1999.0585

Thoits, P. A. (2012). Role-identity salience, purpose and meaning in life, and well-being among volunteers. *Social Psychology Quarterly*, *75*(4), 360–384. doi:10.1177/0190272512459662

Tomaka, J., Thompson, S., & Palacios, R. (2006). The relation of social isolation, loneliness, and social support to disease outcomes among the elderly. *Journal of Aging and Health*, *18*(3), 359–384. doi:10.1177/0898264305280993

Trickett, E. J., Beehler, S., Deutsch, C., Green, L. W., Hawe, P., McLeroy, K., & Trimble, J. E. (2011). Advancing the science of community-level interventions. *American Journal of Public Health*, *101*(8), 1410–1419. doi:10.2105/ajph.2010.300113

Uchino, B. N. (2009). Understanding the links between social support and physical health: A life-span perspective with emphasis on the separability of perceived and received support. *Perspectives on Psychological Sciences*, *4*, 236–255. doi:10.1111/j.1745-6924.2009.01122.x

Valtorta, N. K., Kanaan, M., Gilbody, S., Ronzi, S., & Hanratty, B. (2016). Loneliness and social isolation as risk factors for coronary heart disease and stroke: Systematic review and meta-analysis of longitudinal observational studies. *Heart*, *102*(13), 1009–1016. doi:10.1136/heartjnl-2015-308790

Wiles, J. L., Leibing, A., Guberman, N., Reeve, J., & Allen, R. E. (2012). The meaning of "aging in place" to older people. *The Gerontologist*, *52*(3), 357–366. doi:10.1093/geront/gnr098

Windsor, T. D., Fiori, K. L., & Crisp, D. A. (2012). Personal and neighborhood resources, future time perspective, and social relations in middle and older adulthood. *Journal of Gerontology*, *67B*(4), 423–431. doi:10.1093/geronb/gbr117

Author Biographies

Jie Yang is an assistant professor at East Carolina University School of Social Work. Jie is interested in healthy aging broadly and focuses on productive engagement (e.g., work/unemployment and volunteering) in later life and social isolation among older adults.

Sara M. Moorman is an associate professor of Sociology at Boston College and a fellow of the Gerontological Society of America. Her work addresses families, health, and aging. Her current major project, funded by the National Institute of Aging, examines early life predictors of later life cognitive impairment, particularly family socioeconomic status.