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The Importance of Neighborhood Social Cohesion and Social Capital for the Well Being of Older Adults in the Community

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Purpose of the Study: We aimed to investigate whether social capital (obtaining support through indirect ties such as from neighbors) and social cohesion (interdependencies among neighbors) within neighborhoods positively affect the well being of older adults. ***Design and Methods:*** This cross-sectional study included 945 of 1,440 (66% response rate) independently living older adults (aged ≥70 years) in Rotterdam. We fitted a hierarchical random effects model to account for the hierarchical structure of the study design: 945 older adults (Level 1) nested in 72 neighborhoods (Level 2). ***Results:*** Univariate analyses showed that being born in the Netherlands, house ownership, education, income, social capital of individuals, neighborhood security, neighborhood services, neighborhood social capital, and neighborhood social cohesion were significantly related to the well being of older adults. Multilevel analyses showed that social capital of individuals, neighborhood services, neighborhood social capital, and neighborhood social cohesion predicted the well being of older adults. Single and poor older adults reported lower well being than did better off and married older adults. However, the effects of marital status and income were mediated by neighborhood services, social capital, and social cohesion. Neighborhood services, social capital, and social cohesion may act as buffer against the adverse effects of being single and poor on the well being of older adults. ***Implications:*** The results of this study support the importance of social capital of individuals, as well as social capital within the neighborhood and social cohesion within the neighborhood for well being of older adults. The well being of older adults may also be enhanced through the improvement of quality of neighborhood services.

Key Words: Community study, Netherlands, Multilevel analyses

The Netherlands—along with the rest of the world—faces a number of demographic challenges that will have a significant and detrimental effect on its population if not adequately addressed (e.g., negative impact on economic growth and strain on the provision of services for older adults). Demographic change due to increased life expectancy is affecting all of Europe. The percentage of the European Union (EU) population aged ≥65 years increased from 13.7% in 1990 to 17.4% in 2010, and about 30% of the EU population is predicted to be ≥65 years of age by 2060. The proportion of the EU population aged ≥80 years is forecast to increase fourfold from 1990 (3.1%) to 2060 (12.1%; The European Commission, 2011). Due to increased life expectancy at birth and decreased life fertility rate, it is expected that by 2050 for the first time in history there will be more older people (≥65) than youth (<15; Lunenfeld, 2008). The decline of the working population and increase of the retired population has a negative impact on economic growth. Furthermore, demand for health care budgets will rise and there will be an increased

pressure on health care budgets (The European Commission, 2011). While the continuing increase in life expectancy is a major achievement, it presents the challenge of keeping older people active and maintaining their well being. Although older people often experience a number of chronic diseases and functional impairments, many achieve some degree of balance in their lives; they may require health care but it does not dominate their existence. Active aging is the process of optimizing opportunities for social participation and security to enhance well being (World Health Organization, 2002). "Active" refers to the continuing participation of older people in society, not necessarily by playing contact sports or being in the labor force, but in a manner that allows them to realize their potential for well being throughout their lives. A holistic approach to the well being of the older population that includes the investigation of individual characteristics as well as neighborhood contexts may be helpful in understanding how to enhance older people's activities (Hildebrand & Neufeld, 2009) improve healthy lifestyles, social relationships, and, in turn, well being (Cramm, Møller, & Nieboer, 2012; Oswald, Jopp, Rott, & Wahl, 2011; Wiles, Leibing, Guberman, Reeve, & Allen, 2011).

Although neighborhood characteristics have been found to affect individual health status (Blazer, 2008; Cramm, Koolman, & Nieboer, 2011; Cramm & Nieboer, 2011; Fagg et al., 2008; Halpern, 2005; Kawachi, Subramanian, & Kim, 2008; Marmot, 1998; Mohnen, Groenewegen, Völker, & Flap, 2011; Stafford, De Silva, Stansfeld, & Marmot, 2008; Subramanian, Kubzansky, Berkman, Fay, & Kawachi, 2006; Subramanian, Lochner, & Kawachi, 2003; Van Hooijdonk, Droomers, Deerenberg, Mackenbach, & Kunst, 2008; Veenstra et al., 2005; Wen, Cagney, & Christakis, 2005), their effect on well being has been investigated to a lesser extent. Well being refers to an individual's appraisal of his or her life situation as a whole; the totality of pleasures and pains, or quality of life (Bradburn, 1969; Diener, 1984; Omodei & Wearing, 1990; Watson, 1988), which is broader than health. According to the Social Production Function theory besides the universal goals of psychological, physical, and social well-being (identical for all human beings), it additionally contains instrumental goals stimulation, comfort, status, behavioral confirmation, and affection (individual preferences for the means leading to universal goals; Ormel, Lindenberg, Steverink, & Verbrugge, 1999). This allows much more specificity about how individuals achieve well being. Relatively little research has investigated the effect of neighborhood characteristics, such as social cohesion and social capital, on well being (Cramm, Møller, & Nieboer, 2010, Cramm, Møller et al., 2012). Neighborhood social capital and social cohesion represent resources that individuals can access via membership in a group or community. These resources consist of norms of reciprocity, civic participation, trust in others, and the benefits of membership (Drukker, Buka, Kaplan, McKenzie, & Van Os, 2005; Kawachi, Kennedy, & Glass, 1999; Lochner, Kawachi, Brennan, & Buka, 2003; Poortinga, 2006; Putnam, 2000; Stafford et al., 2008; Subramanian et al., 2003; Van Hooijdonk et al., 2008; Wen et al., 2005). If such neighborhood conditions are poor, then obtaining support may be more difficult, especially for older people who live alone (Thompson & Krause, 1998). Therefore, one might expect that greater access to social capital or stronger cohesion among community members would enhance well being.

Previous research on the effects of neighborhood characteristics has mostly been conducted at higher geographical levels of aggregation (i.e., countries, states/provinces, or large regions; Folland, 2007; Kawachi et al., 1999). Mohnen and colleagues (2011), however, argue that the effect of collective social capital and social cohesion can be measured and understood much more precisely at the neighborhood level. Because older adults report greater residential stability and spend a large part of their leisure time at home, it is plausible to expect that they are influenced by their neighbors and the neighborhood environment (Mohnen et al., 2011). Furthermore, existing studies have shown limitations regarding the measurement of social capital (Fagg et al., 2008). For example, the failure to adjust for the influence of relevant socioeconomic, as well as physical conditions, and neighborhood characteristics may lead to biased conclusions about the effects of social capital and cohesion within neighborhoods on older adults' well being.

Some available research has examined the effects of neighborhood characteristics on well being among individuals in the Netherlands (Völker, Flap, & Lindenberg, 2007) and South Africa (Cramm, Møller et al., 2012). Both studies, however, were conducted among adults aged 18–65 years; the effect of social capital and social cohesion in the neighborhood on well being among older adults remains unknown. The present study examined the association between neighborhood

social capital (obtaining support through indirect ties; Mohnen et al., 2011) and social cohesion (interdependencies among neighbors) and the well being of older adults while controlling for important neighborhood-level conditions (e.g., neighborhood security and quality of services) and relevant individual characteristics (e.g., education, income, age, gender, and individual-level social capital [obtaining support through direct ties]). We aimed to determine whether social capital and social cohesion within neighborhoods positively affected well being of older adults; and if so, whether this effect remained stable after accounting for other relevant socioeconomic and physical conditions of both neighborhoods and older individuals.

Design and Methods

A sample of 1,440 independently living older adults (aged ≥70 years) in four districts of Rotterdam (Lage Land/Prinsenland, Lombardijen, Oude Westen, and Vreewijk) was randomly identified using the population register. These four districts consisted of 72 neighborhoods. This sample included about 430 eligible older adults per district and was proportionate to the 72 neighborhoods in these districts and proportionate to age (age groups 70–74; 75–79; 80–84; 85+). The eligible older adults were asked by mail to complete a written or online questionnaire. Respondents were rewarded with a 1 of 5 ticket in the monthly Dutch State Lottery. Nonrespondents were first sent a reminder by mail, were then asked by telephone to participate, and were finally visited at home if respondents could not be reached by telephone. This strategy yielded a 66% (n = 945) response rate. The study was approved by the ethics committee of the Erasmus University Medical Centre of Rotterdam in June 2011. A detailed description of our study design can be found in our study protocol (Cramm, van Dijk, Lötters, van Exel, & Nieboer, 2011).

Measures

Well-being was measured with the 15-item version of the Social Production Function Instrument for the Level of Well-being (SPF-IL; Nieboer, Lindenberg, Boomsma, & van Bruggen, 2005). This scale measures levels of physical (comfort, stimulation) and social (behavioral confirmation, affection, status) well being. Examples of questions are: "Do people pay attention to you?" (affection), "Do you feel useful to others?" (behavioral confirmation), "Are you known for the things you have accomplished?" (status), "In the past few months have you felt physically comfortable?" (comfort), "Do you really enjoy your activities?" (stimulation). Answers were given on a four-point scale ranging from *never* (1) to *always* (4), with higher mean scores indicating greater well being. Cronbach's alpha of the SPF-IL was .86, indicating good reliability. The SPF-IL has proven to be a reliable instrument to assess well being in older populations (Cramm, Strating, de Vreede, Steverink, & Nieboer, 2012; Frieswijk, Steverink, Buunk, & Slaets, 2006; Schuurmans et al., 2005; Steverink, Lindenberg, & Slaets, 2005).

Our main explanatory variables were social capital and social cohesion in the neighborhood. Social capital within the neighborhood is obtained through support from indirect ties and group membership from neighbors, whereas social cohesion within the neighborhood refers to interdependencies among neighbors. We used the eight-item instrument of Fone and colleagues (2007) to investigate neighborhood social cohesion. Examples of items are: "If I needed advice about something, I could go to someone in my neighborhood," "I borrow things and exchange favors with my neighbors," "I would be willing to work together with others on something to improve my neighborhood." Each question consisted of a five-point response scale ranging from *strong disagreement* (1) to *strong agreement* (5). A social cohesion score (range, 8–40) was created by summing the responses to these eight questions with equal weighting (M = 24.4; standard deviation [SD] = 5.4). The Cronbach's alpha value of this subscale was .75, indicating reliability. For the analyses, variables and the resulting scale were coded so that higher values indicated stronger social cohesion.

We used the eight-item instrument of Yang, Yang, Shih, and Kawachi (2002) to assess social capital in the neighborhood. Examples of questions are: "Neighbors enjoy participating in community activities together," "Neighbors chat and greet each other," "Neighbors are mutually concerned for each other," and "I feel happy with my neighborhood." Responses were structured on a four-point Likert scale ranging from total disagreement (1) to total agreement (4). The social capital score was derived by summing the responses to each item, with higher values indicating stronger social capital. Cronbach's alpha of this score was .87.

In the analyses, we adjusted for nine individual characteristics (sex, age, marital status, ethnic

Table 1. Factor Analyses

	Component			
	1	2	3	4
Neighborhood social capital instrument				
Item 1: Neighbors participate activities	**0.700**	0.072	0.066	0.051
Item 2: Neighbors chat and greet	**0.740**	0.163	0.011	0.027
Item 3: Neighbors are mutually concerned	**0.826**	0.144	0.004	−0.001
Item 4: Neighbors provide assistance	**0.696**	0.132	−0.014	0.059
Item 5: Neighbors talk in distress	**0.725**	0.068	0.006	0.038
Item 6: Neighbors maintain public hygiene	**0.673**	0.101	−0.112	−0.012
Item 7: Neighbors solve problems	**0.775**	0.138	0.006	0.056
Item 8: I feel happy with my neighborhood	**0.557**	0.240	−0.066	−0.063
Individual social capital instrument: subscale support				
Item 1: Active group membership	0.002	0.221	0.083	**0.702**
Item 2: Receive help from the groups	−0.075	0.015	0.051	**0.837**
Item 3: Social support from individuals/groups	0.144	−0.119	0.084	**0.546**
Individual social capital instrument: citizenship activities				
Item 4: Did you address problems/issues	−0.012	−0.034	**0.841**	0.133
Item 5: Did you talk to local authority	−0.046	−0.056	**0.843**	0.132
Individual social capital instrument: cognitive social capital				
Item 6: Trust in the community	0.157	**0.759**	−0.106	0.045
Item 7: People in this community get along	0.301	**0.754**	0.006	0.003
Item 8: Feeling part of the community	0.311	**0.669**	0.099	−0.040
Item 9: The majority of people in this community would try to take advantage of you (reverse coding)	0.006	**−0.507**	0.383	−0.123

Notes: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Four factors (eigenvalues > 1) explained 56% of variance; factor solution presented after varimax rotation.

background, home ownership, years of residence, education, income, and social capital of individuals) that can influence the perception of neighborhood social capital, social cohesion, and well being (Bjørnskov, 2003, 2006; Cramm et al., 2010, Cramm, Møller et al., 2012; Diener & Scollon, 2003; Easterlin, 2000; Frey & Stutzer, 2003; Grootaert, 2002; Haggerty et al., 2001; Harpham, 2008; Ross, Reynolds, & Geis, 2000; Wilkinson & Pickett, 2006; Yip et al., 2007). We coded sex as a dummy variable; age, measured in years; ethnic background, coded as a dummy variable (country of birth: the Netherlands or other); and marital status, coded as a dummy variable.

We included the variable of home ownership (owner or renter) in the survey. Also, the years of residence at the given address were included to control for the length of influence of the neighborhood context. This variable was recorded using the question, "How long have you lived at this address?". Reponses to this question were grouped into five categories: <1 year (1), 1–3 years (2), 3–7 years (3), 7–15 years (4), and ≥15 years (5).

Two indicators of social status were used in the analysis: education and income. We asked respondents to indicate the highest educational qualification achieved. We used a seven-point scale ranging from 1 (primary school or less) to 7 (university degree). In our analyses, we measured net monthly household income. This variable took into account all types of income per household, including social benefits, pensions, and salaries. We used a five-point scale ranging from 1 (€1000) to 5 (>€3050). The total monthly household income was than divided by the number of people in the household.

Because we were interested in social capital within the neighborhood in addition to social capital of individuals, we controlled for social capital of individuals. We assessed social capital of individuals by asking about structural (e.g., group membership) and cognitive (e.g., trust, social harmony, sense of belonging, and sense of fairness) characteristics (De Silva et al., 2006; De Silva, Huttly, Harpham, & Kenward, 2007). Factor analyses showed that the instruments used to assess individual level social capital and social capital within the neighborhood were clearly distinguishable (Table 1).

We also adjusted for older adults' experiences with neighborhood conditions, such as the adequacy of neighborhood services and facilities (Yang et al., 2002), using three items: (a) The neighborhood has adequate lighting; (b) The neighborhood has convenient transportation; and (c) The neighborhood has adequate public facilities. Responses to

these items were structured on a four-point Likert scale ranging from *total disagreement* (1) to *total agreement* (4). The adequacy of services score was derived by summing the responses to each item, with higher values indicating more adequate services. Cronbach's alpha of this score was .65. We also assessed security in the neighborhood (Yang et al., 2002) using four items: (a) The neighborhood is quiet and peaceful; (b) The neighborhood is spacious and roomy; (c) The neighborhood is safe; and (d) The neighborhood is orderly, with good public security. Responses to these items were structured on a four-point Likert-scale ranging from *total disagreement* (1) to *total agreement* (4). The neighborhood security score was derived by summing the responses to each item, with higher scores indicating a more secure neighborhood. Cronbach's alpha of this score was .83.

Analysis

We employed descriptive statistics and used univariate analyses to assess the relationships between the well being of older adults and individual characteristics (sex, age, marital status, ethnic background, home ownership, years of residence, education, income, and social capital of individuals) and neighborhood conditions (neighborhood security, adequacy of neighborhood services, social capital, and social cohesion).

We fitted a hierarchical random effects model to account for the hierarchical structure of the study design. The structure comprised 945 older adults (Level 1) nested in 72 neighborhoods (Level 2). Respondents were excluded if observations were missing for any outcome, which led to the inclusion of 772 respondents in our multilevel regression analyses. We employed a two-level model to investigate the predictive role of individual and neighborhood characteristics on well being of older adults. To assess the extent to which variance should be ascribed to the neighborhood rather than to the individual, neighborhoods served as Level-2 units in Model 1. We introduced the individual characteristics in Model 2 and the neighborhood characteristics in Model 3. Results were considered statistically significant if two-sided p values were $\leq .05$. Deviance tests or likelihood ratio tests were used to compare the relative fit of the different models. The difference in deviance of two nested models had a χ^2 distribution with degrees of freedom equal to the number of additional parameters in the larger model (SPSS ver. 17, mixed models option; SPSS, Inc., Chicago, IL).

Table 2. Descriptive Statistics

Demographic characteristics	Range	% or Mean (*SD*)
Sex (female)		57%
Age (years)	70–101	77.5 (5.8)
Marital status (married)		35%
Ethnic background (Dutch)		83%
House ownership (owner)		19%
Years of residence	1–5	4.34 (0.99)
<1		2%
1–3		6%
3–7		9%
7–15		22%
≥15		61%
Education	1–7	2.3 (0.50)
Income	1–5	2.18 (1.0)
Social capital of individuals	0–19	6.2 (2.7)
Neighborhood security	4–16	11.4 (2.2)
Neighborhood services	3–12	8.9 (1.4)
Neighborhood social capital	8–32	21.8 (4.0)
Neighborhood social cohesion	8–39	24.4 (5.4)
Well being	1–4	2.6 (0.5)

Results

Table 2 displays the descriptive statistics for all independent variables and well being. Of the 945 respondents, 57% were women. Their average age was 77.5 (range = 70–101; *SD* = 5.8) years. About one-third (35%) of respondents were married and 83% were born in the Netherlands. These results are comparable with a community study of Metzelthin and colleagues (2012) among 532 community dwelling older adults (70+) in other Dutch regions. The average age of respondents in their sample was 77.2 years (range = 70–97; *SD* = 5.5) and 59% of the respondents were women.

Correlations of independent variables and well being of older adults are displayed in Table 3. The results of univariate analyses showed that being born in the Netherlands ($p \leq .01$), house ownership ($p \leq .01$), education ($p \leq .001$), income ($p \leq .001$), social capital of individuals ($p \leq .001$), neighborhood security ($p \leq .001$), neighborhood services ($p \leq .001$), neighborhood social capital ($p \leq .001$), and neighborhood social cohesion ($p \leq .001$) were significantly related to the well being of older adults. No significant relationship was found between well being and gender, age, marital status, or years of residence.

Table 4 displays the results of the multilevel regression analysis. The first (empty) model served as a baseline with just intercepts. Model 2 showed that marital status, income, and social capital of individuals had a positive effect on well being. When neighborhood characteristics were added to

Table 3 Associations among Individual Characteristics, Neighborhood Characteristics, and Well-Being of Older Adults

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Sex (female)													
2. Age	.17***												
3. Marital status (married)	-.37***	-.28***											
4. Ethnic background (Dutch)	.13***	.16***	-.07*										
5. House ownership (owner)	-.04	-.07*	.12***	.08*									
6. Years of residence	-.01	.08**	-.01	.02	.09**								
7. Education (1–7)	-.07*	-.06	.06	.19***	.34***	.05							
8. Income (1–5)	-.08*	.07	-.20***	.24***	.32***	.01	.43***						
9. Social capital of individuals	.03	.11***	-.07*	.11***	.12***	-.02	.27***	.23***					
10. Neighborhood security	-.04	.10**	.02	-.01	.13***	-.06	.11***	.14***	.07*				
11. Neighborhood services	-.05	-.01	.01	-.04	.11***	-.04	.05	.06	.03	.54***			
12. Neighborhood social capital	.03	.07*	.01	.03	.03	-.06	-.01	.13***	.24***	.48***	.40***		
13. Neighborhood social cohesion	.03	-.07*	.02	.10**	.11***	.05	.11**	.15***	.35***	.14***	.14***	.55***	
14. Well-being	.04	-.04	.05	.09**	.10**	.01	.11***	.13***	.26***	.19***	.18***	.38***	.45***

Notes: *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$ (two-tailed).

the equation in Model 3, the results showed that in addition to social capital of individuals, neighborhood services, social capital, and social cohesion predicted the well being of older adults. Marital status and income were not significantly associated with well being when neighborhood services, security, social capital, and social cohesion were included in the equation. Thus, neighborhood security, social capital, and social cohesion acted as mediators between marital status, income, and well being among older adults. In total, 27.4% of individual-level variance and 19.7% of neighborhood-level variance could be explained.

Discussion

Understanding the effect of the social environment on the well being of older adults is important for the promotion of active aging in the community. To our knowledge, we are the first to show that in addition to social capital of individuals and the quality of neighborhood services, neighborhood social capital, and social cohesion are significantly and independently associated with well being of older adults. Social cohesion and social capital among neighbors may lead to higher levels of well being in older adults because higher levels of neighborhood cohesion result in higher degrees of social organization, including the provision of instrumental support to neighbors (e.g., support in times of sickness and help with transportation, groceries, picking up mail, and throwing away garbage). These seemingly small favors among neighbors may prevent worries about the future—neighbors take care of each other and watch over each other—that translate into better well being outcomes. Neighborhood social cohesion and social capital might influence well being through psychosocial processes, such as through the provision of affective support and the enhancement of self-esteem and mutual respect. The ability to depend on neighbors for help may attenuate the adverse effects on well-being caused by increasing losses and declining gains that comes with aging (Baltes & Baltes, 1990).

This study showed that single and poor older adults reported lower well being than did better off and married older adults. This finding is consistent with earlier studies showing that the risk of low subjective well being is apparently higher for poor and single individuals (Cramm et al., 2010; Diener & Biswas-Diener, 2002). However, the effects of marital status and income were mediated

Table 4. Hierarchical Linear Multilevel Analyses of Well Being in Older Adults (n = 772)

Model	1		2		3	
	B	*SE*	B	*SE*	B	*SE*
Constant	2.56	0.02	2.56	0.02	2.57	0.02
Sex (female)			0.03	0.02	0.03	0.02
Age			–0.03	0.02	–0.01	0.02
Marital status (married)			0.05*	0.02	0.04	0.02
Ethnic background (Dutch)			0.02	0.02	0.01	0.02
House ownership (owner)			0.02	0.02	0.01	0.02
Years of residence			0.00	0.02	0.00	0.02
Education (1–7)			–0.01	0.02	0.00	0.02
Income (1–5)			0.05*	0.02	0.02	0.02
Social capital of individuals			0.13***	0.02	0.07***	0.02
Neighborhood security					0.03	0.02
Neighborhood services					0.04*	0.02
Neighborhood social capital					0.08***	0.02
Neighborhood social cohesion					0.16***	0.02
–2loglikelihood	1455.001		1169.602		961.165	
Explained variance (individual level)			18.3%		27.4%	
Explained variance (neighborhood level)			10.7%		19.7%	

Notes: *$p \leq .05$. **$p \leq .01$. ***$p \leq .001$ (two tailed).

by neighborhood services, social capital, and social cohesion. Neighborhood services, social capital, and social cohesion may act as buffer against the adverse effects of being single and poor on the well being of older adults. This finding is particularly relevant for policymakers helping them to target community interventions at these neighborhoods. It is important for health and well-being promotion policies to take into account not only the socioeconomic characteristics of people but also the contexts of their everyday lives. This paper makes a contribution to debates about how to measure and possibly intervene on particular elements of everyday life, namely neighborhood services, social cohesion, and social capital within the neighborhood.

The mean well-being score within our study population (2.6 ± 0.5; range = 1.0–4.0) was significantly lower than that obtained by Frieswijk and colleagues (2006) in a study of older adults using the SPF-IL (2.8 ± 0.4; $p \leq .001$). Whereas we included 70+ older adults, Frieswijk and colleagues (2006) investigated among 65+ older adults. Furthermore, we investigated older adults living in the city of Rotterdam, while they also included older adults from smaller towns and villages. The older age and inclusion of older adults living in a large city may explain the lower well-being scores in our study sample.

Our study has some limitations. Most importantly, the cross-sectional design hampered our ability to capture neighborhood dynamics and to draw causal inferences. It is not possible to determine the direction of the association using our study findings. Our results establish a significant association, which is an important step that prompts further studies to identify directionality. We followed the advice of Mohnen and colleagues (2011) and assessed neighborhood social capital and cohesion by using items that focus specifically on access to neighbors and general local contacts in the neighborhood, which is a strength of our study. Usually, social cohesion and social capital instruments are more general. In line with theoretical considerations of social capital, we measured this variable using questions regarding actual interactions between neighbors. This is the first study to investigate neighborhood social capital and social cohesion separately in a large sample of older adults. Furthermore, we also systematically accounted for individual—especially social capital of individuals—and neighborhood conditions in our analysis of the effects of neighborhood social capital and social cohesion on well-being in older adults.

We can conclude that in addition to social capital of individuals, neighborhood services, social capital, and social cohesion are beneficial to the well being of older adults. These findings are particularly important given the aging of global populations. Our results support the importance of social capital of individuals (obtaining support through direct ties), as well as social capital within the neighborhood (obtaining support through

indirect ties such as from neighbors) and social cohesion within the neighborhood (interdependencies among neighbors). Furthermore, the well being of older adults may be enhanced by the improvement of the quality of neighborhood services.

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