Self-rated Health and Social Capital Among Aging People Across the Urban–Rural Dimension

Olli Nummela · Tommi Sulander · Antti Karisto · Antti Uutela

Abstract

Background Previous studies have found self-rated health to be associated with social capital. However, there is lack of studies examining social capital among aging people and its impact on self-rated health in the urban–rural context.

Purpose The purpose of this study was to investigate associations between self-rated health and indicators of social capital (trust, various social contacts, social participation, and access to help) among aging people living in urban and rural areas in Finland.

Method A postal survey was conducted in 2002 among men and women born in 1926–1930, 1936–1940, or 1946–1950 and dwelling in 14 municipalities in the Päijät-Häme hospital district in Finland. A total of 2,815 participants represented 66% of the original stratified (by age, gender, and municipality) sample. Logistic regression analyses were used to examine the associations.

Results Active social participation and easy access to help from others were associated with good self-rated health, especially in the urban and sparsely populated rural areas. Trust was a particularly important correlate of subjective health in the urban area, though its significance diminished after adjusting to all background variables. No overall disparities in self-rated health between the areas emerged. Social participation and access to help as indicators of social capital seem to be important resources when aging men and women assess their subjective health.

Conclusion Increasing efforts to encourage social participation and facilitate access to help from other persons should be included among the key priorities in community health promotion.

Keywords Self-rated health · Social capital · Urban–rural · Aging

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Introduction

Self-rated health is an important indicator of an individual's health status in general [1]. Self-rated health has been found to be associated with components of social capital in cross-sectional studies [2, 3, 4, 5, 6]. No universally agreed definition of social capital exists [7]. Social capital has been defined, e.g., as a phenomenon arising from changes in relations among people facilitating action [8] or as networks, norms, or social trust facilitating cooperation for mutual benefit [9]. Differences in the levels of social capital have been suggested to be the cause why some communities have healthier citizens than others [5].

In earlier studies, several indicators of social capital have been used, particularly trust, social relations, formal and informal social networks, group membership, and civic engagement [10]. Lack of trust has been found to associate with poor self-rated health [3, 5, 6]. Good social integration is generally linked to better health outcomes, and also the quality of ties influences health [11], whereas a lack of social networks associates with poor self-rated health among older people [12].

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The measures of participation and volunteering have been considered important components of social capital [9]. High levels of membership in voluntary or religious associations and religious involvement are related to higher self-rated health [3, 4, 5] in the general population. Higher levels of well-being and self-rated health are also more common among the aging people who volunteer [13] or participate in clubs and associations [14].

Our systematic literature review (Medline, Science Citation Index, and Social Science Citation Index) revealed no studies examining social capital among aging people and its impact on self-rated health in the urban–rural context. The community context is a major factor in understanding the genesis of social capital. Neighborhood features are seen as necessary prerequisites for social capital [15]. Neighborhood affluence appears to be a powerful predictor of the health status of citizens [16]. Overall, social capital has been proven useful in understanding the relationship between poverty and the type of residential area, health, and well-being [15].

The aim of the present study was to investigate the association of social capital with self-rated health among aging people from different kinds of residential areas of the Päijät-Häme hospital district in southern Finland. The primary questions were: How do individual social capital indicators contribute to self-rated health, and do these contributions vary by the type of the residential area?

Material, Methods, and Measures

Subjects and Procedure

The sample subjects were aging men and women of three age cohorts living in the Päijät-Häme hospital district in Finland. The subjects were born in 1926–1930, 1936–1940, and 1946–1950 and were aged 72–76, 62–66, and 52–56 years, respectively, at the baseline of 2002. By social participation, they represented different life phases, being either pensioners, recently retired or undergoing the retiring process, or still active in work. The intention is to monitor the subjects every 3 years until 2012 [17]. The design and sample of the study have been described in more detail elsewhere [18].

The response rate was 66% (N=2,815). For the analyses, the respondents were divided into three residential categories: (1) Lahti, the sole urban center based on the population registry [19], (2) rural population centers (villages, suburbs, or population centers in semiurban or rural areas), and (3) sparsely populated countryside (low-populated semiurban or rural areas) based on the self-reports [17].

Self-rated Health

Self-rated health was determined from answers to the question "Is your health generally good, rather good, average, rather poor, or poor?" From these responses, a dichotomous outcome variable (1 = good or rather good, 0 = average, rather poor, or poor) was formulated. Good self-rated health was our primary interest, and the distribution of self-rated health in the five scales was not considered normal. We checked the results keeping the original response categories and found the results comparable to those given here using the dichotomous subjective health variable.

Indicators of Social Capital

The respondents were asked to which degree they thought that "It is best not to trust anyone" (an indicator of interpersonal trust). For the analyses, the responses to the four answering alternatives (totally agree–agree–disagree–totally disagree) were dichotomized to indicate either low trust or high trust.

Social contacts with relatives and family members were covered by five questions involving frequency of contacts with children, grandchildren, siblings, parents, and other immediate relative(s). Persons who answered at least three questions were included in the analyses. The amount of excluded persons was only 0.5%. The answering alternatives ranged from 1 (almost daily) to 6 (I do not have such contacts). The sum index was dichotomized at the mean to indicate either low or high social contacts.

The frequency of contacts with close friends or a relative(s) was assessed with one question with six answering alternatives. The variable was also coded into two categories: alternatives 1–2 (almost daily or a few times a week indicating high) and 3–6 (a few times a month or less indicating low).

Social participation was based on a sum index of five indicators of free time and personal activities during the past year. The subjects were asked about their involvement in hobby activities (choir, art classes, playing music, etc.), attending cultural (exhibitions, theater, movies, concerts) or religious events, studying and self-development, and voluntary work. Persons who answered at least three items were included in the analyses. The amount of excluded participants was 2.6%. The answering alternatives ranged from 1 (every day) to 6 (never). The sum index was dichotomized at the mean to indicate either high or low social participation.

The changes of receiving help from others were assessed by using the Medical Outcome Study social support survey [20]. This 19-item scale with five answering alternatives (never, seldom, sometimes, mostly, and always) inquires how often the subjects thought they could get help, advice, company, etc. if needed. Subjects answering at least 12 items were included in the analysis. The amount of excluded participants (those who answered one to 11 questions) was

7.6%. For the analyses, the sum was dichotomized at the mean to indicate either high or low access to help.

Other Independent Variables

For control purposes, other variables known to associate with subjective health were included in the analyses. Marital status was dichotomized as: 0 = married or cohabiting, 1 = separated, divorced, widowed, or single. The frequency of each individual class was too low to make the separation possible. Education was coded into two categories: elementary education or less and secondary education. The adequacy of income after necessary expenses was dichotomized as: 0 = very and rather good, 1 = average, rather poor, and very poor. Obesity (body mass index≥30) was calculated as measured weight (kg) divided by the square of height (m^2). Daily smokers included persons who smoked cigarettes, cigars, or pipes daily. The presence of chronic illness was probed using a list of 24 diseases diagnosed or treated by a physician in the past 12 months (0 = no disease present, 1 = at least one disease present). We also examined the workforce participation variable as a control variable (employed, retired, unemployed) to find out whether it had any impact on the results.

Statistical Methods

Cross-tables with chi-square tests, odds ratios with 95% confidence intervals, and variances explained (R^2 Nagelkerke) were computed to analyze associations between the background and social capital variables and self-rated health. The statistical analyses were performed using the SPSS 9.0 software package.

In the statistical calculations, the data were corrected by a weighting variable so that the weighted data matched the population of the municipalities. The interactions of the area with the social capital variables were included separately in the adjusted model 3 (Table 2).

We adopted the most common practice of entering variables into the models by allowing the general societal conditions to be the first to come in, followed by acquired personal characteristics associated with material welfare and health behaviors. Consequently, we entered the socio-demographic factors first, then the marital status and education, and, finally, health behaviors and the adequacy of income. Due to the dissimilarity of the age groups, the importance of the employment situation for the results was also considered (not shown in tables).

Results

Good self-rated health was more common ($p<0.05$) among respondents with high trust in the urban area and rural population centers. In contrast, good self-rated health was more common in all areas ($p<0.05$) among those with active participation and good access to help from others. The frequency of social contacts with either family members and other relatives or close friends was not statistically significantly associated with self-rated health (Table 1).

Table 1 Good self-rated health (%) according to different dimensions of social capital, weighted figures

	Urban ($N=1,157–1,241$)	Rural population center[a] ($N=825–928$)	Sparsely populated countryside[b] ($N=469–530$)
Trust			
Low	40.9	40.4	40.5
High	53.5	50.6	48.6
p	0.000	0.005	0.080
Social contacts with relatives and family members (outside households)			
Low	46.8	45.9	43.6
High	51.8	48.0	47.7
p	0.082	0.530	0.334
Frequency of contacts with close friends or close relatives			
Low	46.4	42.8	45.3
High	51.1	49.7	45.8
p	0.133	0.056	0.908
Participation			
Low	47.1	43.9	41.4
High	53.5	55.1	56.3
p	0.031	0.001	0.001
Access to help from other persons			
Low	40.6	40.4	38.0
High	56.3	54.1	53.5
p	0.000	0.000	0.001

[a] Center, suburb, or population center in semiurban or rural area
[b] Sparsely populated part of semiurban or rural area

Table 2 Odds ratios (OR), 95% confidence intervals, and R^2 (Nagelkerke) of good self-rated health by various measures of social capital in Päijät-Häme area

	Urban			Rural population center[a]			Sparsely populated countryside[b]		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Trust									
Low	1	1	1	1	1	1	1	1	1
High	**1.53 (1.19–1.97)**	**1.45 (1.12–1.88)**	1.13 (0.85–1.51)	**1.37 (1.02–1.84)**	1.22 (0.90–1.65)	1.11 (0.80–1.52)	1.19 (0.81–1.76)	1.07 (0.71–1.59)	0.89 (0.58–1.38)
Trust × area p=0.6840	R^2 0.057	R^2 0.073	R^2 0.270	R^2 0.041	R^2 0.064	R^2 0.155	R^2 0.064	R^2 0.109	R^2 0.214
Social contacts with relatives and family members (outside households)									
Low	1	1	1	1	1	1	1	1	1
High	1.16 (0.93–1.46)	1.15 (0.91–1.46)	1.14 (0.88–1.48)	0.99 (0.76–1.29)	1.06 (0.81–1.39)	1.03 (0.78–1.37)	1.13 (0.79–1.62)	1.19 (0.82–1.73)	1.14 (0.76–1.70)
Contacts × area p=0.7211	R^2 0.052	R^2 0.073	R^2 0.280	R^2 0.037	R^2 0.062	R^2 0.152	R^2 0.068	R^2 0.109	R^2 0.227
Frequency of contacts with close friends or close relatives									
Low	1	1	1	1	1	1	1	1	1
High	1.10 (0.86–1.41)	1.09 (0.85–1.41)	1.17 (0.89–1.55)	1.21 (0.90–1.63)	1.25 (0.92–1.69)	1.29 (0.94–1.77)	0.91 (0.62–1.32)	0.90 (0.61–1.33)	0.85 (0.56–1.29)
Friends × area p=0.2978	R^2 0.048	R^2 0.069	R^2 0.275	R^2 0.035	R^2 0.063	R^2 0.153	R^2 0.066	R^2 0.115	R^2 0.221
Participation									
Low	1	1	1	1	1	1	1	1	1
High	**1.29 (1.01–1.64)**	1.25 (0.97–1.60)	**1.36 (1.04–1.79)**	**1.51 (1.14–2.00)**	**1.35 (1.01–1.81)**	1.33 (0.98–1.81)	**1.85 (1.26–2.72)**	**1.63 (1.09–2.42)**	**1.68 (1.09–2.59)**
Participation × area p=0.5361	R^2 0.053	R^2 0.073	R^2 0.279	R^2 0.038	R^2 0.057	R^2 0.153	R^2 0.092	R^2 0.125	R^2 0.232
Access to help from other persons									
Low	1	1	1	1	1	1	1	1	1
High	**1.82 (1.42–2.31)**	**1.64 (1.27–2.13)**	**1.36 (1.02–1.81)**	**1.65 (1.23–2.20)**	**1.50 (1.10–2.04)**	1.38 (0.99–1.91)	**1.85 (1.26–2.73)**	**1.88 (1.24–2.86)**	**1.65 (1.05–2.59)**
Help × area p=0.6253	R^2 0.072	R^2 0.082	R^2 0.284	R^2 0.051	R^2 0.063	R^2 0.163	R^2 0.083	R^2 0.133	R^2 0.228

Significant associations ($p<0.05$) are shown with bold types; model 1: adjusted to age group (52–56, 62–66, 72–76) and gender; model 2: adjusted to age group (52–56, 62–66, 72–76), gender, marital status, and education; model 3: adjusted to age group (52–56, 62–66, 72–76), gender, marital status, education, obesity (BMI≥30), daily smoking, chronic illnesses, and adequacy of income

[a] Center, suburb, or population center in semiurban or rural area

[b] Sparsely populated part of semiurban or rural area

After adjusting to age and gender, trust was still significantly related to self-rated health in urban areas and rural population centers (Table 2, model 1). Active participation and good access to help were significantly associated with good health in every area (model 1). After adjusting to age, gender, marital status, and education (model 2), trust remained significantly associated with self-rated health in the urban area only, whereas the significant association of participation with self-rated health disappeared in the urban area but remained in the other areas.

After controlling all the background variables, only participation and access to help from others were significantly related to self-rated health in the urban area and sparsely populated countryside (Table 2, model 3). The workforce participation did not affect significantly the conclusions drawn (data not given here). The interaction tests (Table 2), which were performed to examine whether the odds ratios differed between the areas, showed that no significant variations in self-rated health were found between the areas.

The explained variances in models 1 and 2 were approximately equal in the urban area (5–8%) and in the rural population centers (4–6%). In the sparsely populated countryside, the variation was larger (about 6–13%). In model 3, the amount of explained variance for self-rated health rose to approximately 27–28% in the urban area, to 15–16% in the rural population centers, and to 21–23% in the sparsely populated countryside. Self-perceived adequacy of income and presence of chronic illnesses had a markedly strong correlation to self-rated health in the urban area (results not shown in tables).

Discussion

Main Findings

The present study showed that, after controlling all the background variables, social participation and access to help from others maintained statistically significant associations with self-rated health in both the urban and sparsely populated countryside areas. The correlation of trust to self-rated health was relatively substantial in the urban area. According to the fully adjusted model, no major differences by area were found in associations of self-rated health and social capital.

Validity of Findings

The sample used in the present study is a large community sample with a relatively narrow age range. To the knowledge of the authors, the present study is the first to investigate the possible urban–rural effects on self-rated health and social capital in a large sample of aging people.

The response rate to the study was satisfactory, indicating reasonable external validity. As it is commonly assumed that nonrespondents have poorer health and less social capital than respondents, the present results may be downward-biased. Moreover, restrictions in the number of social capital variables exist, especially when a larger community sample, such as in this study, is studied for a general health promotion purpose. Furthermore, it is not certain whether all the activities recorded here as social were strictly so social for all of the subjects. The risk of conceptual misinterpretation is low because we used the measures of social capital at the individual level (attitudes and behavior) only [21], but, on the other hand, information of the possible contextual effects could not be received either. In this cross-sectional phase of the community health promotion study, it was not possible to take a stand on any causality questions.

Discussion of Results

The relationship between trust and self-rated health found in the present study is partly consistent with that found in other studies [3, 5, 6], though in this study the association diminished after controlling a number of other factors. The association of trust and self-rated health indicates a link between them in the urban area and rural population centers when adjusted to age and gender. The relatively weak association between trust and self-rated health among the present subjects may be related to the low variance in trust, as, in this population, trust is generally on a high level (cf. [2]). The different results may not, however, be totally comparable due to societal and cultural settings, varying age spans, differences in adjusted background variables, and disagreeing methods of analyses. This study suggests that the economic status of the respondents should be controlled when investigating association of self-rated health with components of social capital. Studies in other developed countries have shown that economic factors are markedly more associated with health than is the social capital at the national level [2, 22].

In the present study, participation and access to help from others were clearly associated with self-rated health after controlling several background variables, more notably in the urban area and the sparsely populated countryside. Thus, the findings suggest that it is not necessarily the frequency of social contacts but rather the type of social contacts and the nature of the person's social activity role that carry importance on a person's self-rated health. The beneficial features of social capital are, first of all, attributable to the quality of the social networks of individuals. Our findings support those of some previous studies, indicating that having helpful auxiliary friends associates with good self-rated health [3] and membership in a wide

variety of voluntary associations correlates positively with self-rated health [5], also among elderly people [14].

Conclusion

An equal distribution of income is one of the major determinants of the population health. Reducing income inequalities yields potential for greater social cohesiveness and, consequently, for better population health [23]. In addition, the present results suggest that some scope still remains for social capital to exert an influence on self-rated health among aging individuals, especially as the perceived adequacy of income has been shown to be highly important and strongly correlate to self-rated health among the same respondents [24]. The present results suggest that using resources to improve the social participation of citizens may be useful for enhancing the health of aging people. As high participation and social support seem to be related to better health, attempts to influence these factors by improving opportunities to engage in social activities and by facilitating access to help when needed should receive attention in municipalities.

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