

The Relationships between Social Capital and Self-Rated Health across Gender Groups

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Social participation as a type of social capital plays an important role in older individuals' health status. The purpose of this study was to identify (1) the direct effects of social trust and participation on self-rated health and (2) the interaction effects of participation in the relation between gender and self-rated health. Data were drawn from 4,670 community-dwelling older adults included in the NHATS (National Health & Aging Trends Study) Round 2. Multivariate models of self-rated health, measured with single self-rated health question in the NHATS, were estimated. In the direct effect model, female, trust, and participation were found to have positive effects on self-rated health status. Interaction between gender and participation was found to be significant ($\beta = .03, p < .05$). Findings imply that social capital may improve older adults' perception on health status, and participation can be more beneficial to older women's perceived health status than males.

Keywords: social capital, self-rated health, gender effect, participation.

Self-rated health is considered a strong health indicator (Bardage et al., 2005; Franks, Gold, & Fiscella, 2003). Personal factors are widely considered to be significant for individuals' health status. Since individuals are susceptible to their social environments, social factors are also significant for individuals' health (De Silva, McKenzie, Harpham, & Huttly, 2005). As a social factor, social capital draws attention from health study (Kawachi, Subramanian, & Kim, 2008). However, the effects of social capital of different gender groups on perceived health has not been identified. Thus, this study explores the effect of community participation on self-rated health across gender groups among older adults.

Physical health conditions are well-known personal factors having close association with self-rated health (Franks, Gold, & Fiscella, 2003; Molarius & Janson, 2002; Pinquart, 2001). In particular, chronic conditions including physical diseases and mental health problems are closely associated with self-rated health status (Molarius & Janson, 2002). Gender is also related to perceived health status. Being female is considered to be a risk factor for health decline (Yang & Lee, 2009). Women are more likely to experience health decline (Cameron, Jing, Manheim, & Dunlop, 2010; Yang & Lee, 2009) and they consistently show lower perceived health status across the life course (Zheng, Yang, & Lang, 2011). Because of social and economic disadvantages, older women are expected to

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report poorer health than men (Arber & Cooper, 1999; Moss, 2002).

Social capital and health

Along with personal factors, social resources are regarded as an influential factor for older adults' health (De Silva, McKenzie, Harpham, & Huttly, 2005). As available social resources to older adults, the effects of social capital on health have been investigated and well documented. Many researchers in health study define social capital as the property of a group or network (Kawachi & Berkman, 2000; Putnam 1993) while some researchers view social capital as individual capacity or resources available to individuals by virtue of memberships in the community or networks (Bourdieu, 1986; Portes, 1998). Commonly, available social resources embedded in network and community are regarded as social capital that consists of cognitive and structural aspects such as physical community environments, perception on community, and social activities and interactions.

Previous studies have reported that among older populations, social capital is closely associated with physical disability (Cramm, van Dijk, & Nieboer, 2013; Hays, Saunders, Flint, Kaplan, & Blazer, 1997; Kahn, Hessling, & Russell, 2003; Sherman et al., 2006), mortality (Hessler, Jia, Madsen, & Pazaki, 1995; Shye, Mullooly, Freeborn, & Pope, 1995), quality of life (Friedman, Parikh, Giunta, Fahs, & Gallo, 2012), life satisfaction (Sherman et al., 2006), cognitive function (Seeman, Lusignolo, Albert, & Berkman, 2001; Zunzunegui, Alvarado, Del Ser, & Otero, 2003), and mental well-being (Hashimoto, Kurita, Haratani, Fujii, & Ishibashi, 1999; Kahn, Hessling, & Russell, 2003; Koenig et al., 1997; Newsom & Schulz, 1996; Sherman et al., 2006; Shiovitz-Ezra & Leitsch, 2010).

Social capital and gender

The effects and level of social capital may vary depending on gender groups, because individuals are exposed to different social environments across gender groups. Social capital for males differs from females' in network sizes, composition, participation and relationships with network members. Males are usually considered to have lower network sizes and less contacts with network members compared to females (Hessler, Jia, Madsen, & Pazaki, 1995; Lin, 2000; Pugliesi & Shook, 1998). While women have larger networks including kin and neighbors, men are more likely to have various members in the network including co-workers and friends (Lin, 2000; McDonald & Mair, 2010; Marsden, 1987). Thus, females have more frequent contacts with network members and better utilization of their formal and informal social structures than males (Schuster, Kessler, & Aseltine, 1990).

Influence of social capital on health also varies by gender groups. Females are more influenced by cognitive aspects of social capital, and they spend more time in community activities than males. Social network cohesion among females is significantly and positively associated with self-reported health, but males do not (Almgren, Magarati, & Mogford, 2009). Females are also more likely to receive social supports and have more supportive interactions with network members than males (Silverstein & Waite, 1993; Schuster, Kessler, &

Aseltine, 1990). Therefore, male older adults with larger social networks perceive better health status compared to those who have smaller networks, while the size of networks is not significant for female older adults (Shye, Mullooly, Freeborn, & Pope, 1995). Additionally, males are more likely to participate in civic activities, while females are more likely to participate in community services (Healy, Haynes, & Hampshire, 2007). Since females spend more of their time in the community compared to men, they are more likely to be influenced by the relationships with the network members and perception on the community (Stafford, Cummins, Macintyre, Ellaway, & Marmot, 2005). The results from previous studies imply that the effects of social capital on health may vary across gender groups. Even though female older adults are more likely to experience poorer health status, social capital may decrease the gender effects on perceived health.

Despite the growing interests in social capital in health study, few studies examined the role of social capital across gender groups, and there is little information about how gender interacts with social capital. Therefore, this study explores the effects of social capital on perceived health status in later life and the association between social capital and gender. Two research questions guided this study to explore the role of social capital and gender: First, how is social capital associated with perceived health status for older population? Second, how does social capital interact with gender and impact perceived health status in later life? A certain social group such as being a female might experience more life stress because of the lower social economic status and social environments compared to a male. According to stress-buffering model, social resources may attenuate the adverse effects of stressors. Therefore, based on theoretical considerations and previous findings about different roles of social capital among different social groups, three hypotheses were formulated to be tested: (1) gender has an association with self-rated health, (2) social capital improves perceived health status, and (3) social capital would modify the effects of gender on perceived health status.

This study on relationships between gender and social capital would provide important information on social resources influencing self-rated health in later life. In particular, this study speculates effects of social capital by gender groups. Therefore, study results may help practitioners and policy makers to develop appropriate services and programs for different gender groups.

Methods

Data and population

This study used the data from the second wave of the National Health and Aging Trends Study (NHATS; Kasper, & Vicki, 2014), which collected information on a nationally representative sample of Medicare beneficiaries aged 65 and older who resided in their homes or residential care setting including nursing homes. In round 1, face-to-face individual sample person interviews were administered to all sample persons living in all settings except nursing homes. Regardless of residential settings, all sample person in round 1 completed sample person

interview in round 2. Sample were three stage stratified based on county, zip codes, and age. To ensure sufficient sample sizes by age and race/ethnic groups in round 1, African American individuals were oversampled. The present study included only those sample persons ($n=5,267$) in round 2 residing in community and excluded individuals in residential care settings and proxy respondents. For this study, individuals who had no missing information on the study variables were selected, and the final sample included 4,670 older adults aged 65 and older.

Measures

Self-rated health. One single item in the NHATS was used to measure self-rated health: “Would you say that in general your health is excellent, very good, good, fair, or poor?” Values were reversely recoded, and higher scores represent better self-rated health.

Socio-demographics. Socio-demographic information included age (in years), gender (0 = male; 1 = female), race (1 = white; 2 = African American; 3 = Hispanic; 4 = others), marital status (0 = married; 1 = others), education (1 = < high school graduation; 2 = high school graduation; 3 = some college; 4 = BA/BS or higher), and Medicaid (0 = no; 1 = yes). As marital status and living arrangement were strongly correlated, living arrangement was removed.

Health conditions. Chronic condition and functional disability were used as indicators of health conditions. The total number of chronic medical conditions diagnosed by a doctor was used to measure health condition including heart disease, high blood pressure, arthritis, osteoporosis, diabetes, lung disease, stroke, and cancer. Activities of daily living were used to measure functional disability. Respondents were asked how much difficulty they had doing activity without help. ADLs included getting out of bed, eating, bath, toilet, and dressing. Responses were recoded as 0: no difficulty, 1: having difficulty, 2: unable to do by self. Cronbach’s alpha was 0.77.

Social capital. Community participation and community trust were measured to represent structural and cognitive social capital. As a structural social capital, the number of community participation was assessed with the following three questions: “in the last month, did you ever attend religious services?” “in the last month, besides religious services, did you ever participate in clubs, classes, or other organized activities?” “in the last month, did you ever do volunteer work?” To measure a cognitive social capital, community trust was created by summing scores of three questions asking about their community: “people in this community know each other very well.” “people in this community are willing to help each other.” “people in this community can be trusted.” The response categories were as follows: “agree a lot (coded 1),” “a little (coded 2),” “do not agree (coded 3).” Scores were reversely recoded, and higher scores represent higher community trust. According to the NHATS user guide (Kasper & Freedman, 2014), this community trust measure was adopted from the neighborhood studies of Cagney and the colleagues (2009) and Sampson and the colleagues (1997). Cronbach’s alpha for community trust was 0.72.

Analysis

Descriptive and correlation analysis were employed to assess the relationships between demographic factors (sex and race), social capital (social participation and community trust) and self-rated health. To examine direct and moderating effects of social capital, hierarchical regression was conducted by entering socio-demographic variables, health conditions, social capital, and interaction term between gender and social participation. Centered scores were used to avoid minimized multicollinearity between direct effects and interaction terms (Aiken & West, 1991). To adjust design effects and account for complex multistage stratified sampling design of the NHATS wave 2 (Kasper & Freedman, 2014), this study used weighted analysis using *svy* command in Stata 13 (StataCorp LP, College Station, Texas, USA).

Results

Descriptive analyses

Among the total 4,670 participants, 40% of them aged between 65 and 74, 41% were between 75 and 85, and the remaining 18% were 85 or older (see Table 1). Over half of the sampled participants (56%) were female, and half of them were married (51%). While about two thirds were white (70%), black and Hispanic were 21% and 2%, respectively. Approximately a quarter of them had attained no education at the high school level (24%); one third had completed high school or GED (35%), 18% had some college education, and the remaining 24% had obtained bachelor or higher degree. Two thirds of them were Medicaid beneficiaries.

Table 1
DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS (N=4,670)

Value	N	%	Value	N	%
Race:			Medicaid:		
White	3300	70.7	Yes	3137	67.2
Black	999	21.4	No	745	32.8
Hispanic	114	2.4	Chronic conditions (out of 8):		
Other	257	5.5	0	433	9.27
Gender:			1	1014	21.7
Male	2038	43.6	2	1376	29.5
Female	2632	56.4	3 or more	1874	39.6
Age:			ADL score (out of 10):		
65–74	1884	40.3	0	3439	73.6
75–84	1937	41.5	1	612	13.1
85 or older	849	18.2	2	259	5.6
Education:			3 or higher	360	7.7
Less than high school	1111	23.8	Community participation:		
High school or GED	1617	36.4	Religious service (Yes)	2866	61.4
Some college	838	17.9	Clubs, classes, or others (Yes)	1844	39.5
Bachelor's degree or more	1104	23.6	Volunteer work (Yes)	1223	26.2
Marital Status:			Community trust:		
Married	2370	50.8	Know each other (Agree a lot)	2076	44.5
Widowed, divorced, or others	2300	49.3	Help each other (Agree a lot)	2745	58.8
			Trust (Agree a lot)	2953	63.2

Means, standard deviations, and correlations between variables are presented in Table 2. On average, the participants had about two chronic conditions ($M = 2.23$, $SD = 1.34$). Most of them reported barely having difficulties on ADLs ($M = 0.55$, $SD = 1.21$), participating in at least one community activity ($M = 1.27$, $SD = 1.01$), and somewhat trusting in their community ($M = 1.44$, $SD = 1.65$). The correlations in Table 2 showed that female participants were more likely to be married ($r = .33$, $p < .05$) and had more chronic conditions ($r = .18$, $p < .05$) than their counterparts. Those who had more chronic conditions tend to have more difficulties on ADLs ($r = .27$, $p < .05$) and less participation in community activities ($r = -.12$, $p < .05$). More difficulties on ADLs were also related to less community participation ($r = -.18$, $p < .05$). The latter was found to be associated with lower levels of community trust ($r = .17$, $p < .05$).

Table 2
CORRELATION, MEAN, AND STANDARD DEVIATION OF VARIABLES (N=4,670)

Correlation	1	2	3	4	5	6	7	8	9	10
1. Race (White)										
2. Gender (Female)	-.019									
3. Age	.066**	.054**								
4. Education	.220**	-.083**	-.123**							
5. Marital status	-.152**	.329**	.196**	-.178**						
6. Medicaid	-.084**	.088**	.082**	-.116**	.087**					
7. ADLs	-.080**	.053**	.149**	-.100**	.076**	.046**				
8. Chronic conditions	-.079**	.170**	.065**	-.141**	.111**	.064**	.283**			
9. Participation	.080**	.067**	-.060**	.267**	-.091**	-.031*	-.159**	-.121**		
10. Community trust	.134**	.004	.009	.074**	-.095**	.006	-.105**	-.082**	.161**	
Mean	.71	.56	1.78	2.41	1.49	.67	.26	2.23	1.27	7.31
S. D.	.455	.496	.732	1.092	.500	.470	.441	1.343	1.007	1.651
Skewness	-.908	-.257	.371	.216	.030	-.732	1.073	.393	.311	-.789
Kurtosis	-1.176	-1.935	-1.072	-1.254	-2.000	-1.465	-.848	-.040	-.985	-.178

Note.* $p < .05$; ** $p < .01$

Multiple regression analyses

Table 3 contains the result of multiple regression analyses of self-rated health status. Model 1 shows the simultaneous effects of the sociodemographic and health condition variables on self-rated health status. All variables in this model were found significant, accounting for 32.8% of the variance in self-rated health status, $F(10, 47) = 155.7$, $p < .001$. Inspection of the betas indicates that less chronic conditions ($\beta = -.32$, $p < .001$), less difficulties in ADLs ($\beta = -.26$, $p < .001$), higher education attainment ($\beta = .19$, $p < .001$), and being female ($\beta = .76$, $p < .001$) were significantly associated with higher levels of self-rated health status. As expected, female older adults were more likely to have higher levels of self-rated health status than male adults ($\beta = .08$, $p < .001$). Married ones and Medicaid beneficiaries were found to have lower levels of self-rated health status than their counterparts, however, the effect sizes of those variables were modest ($\beta = -.04$, $p < .01$; $\beta = -.04$, $p < .05$, respectively).

Social capital variables were added to Model 2. Comparison of the betas

reveals that chronic conditions ($\beta = -.31, p < .001$), difficulties in ADLs ($\beta = -.24, p < .001$), and educational attainment ($\beta = .17, p < .001$) were still strong predictors to determine self-rated health after controlling for participants' race, gender, age, and marital status, accounting for 34.0% of the variance in self-rated health status, $F(12, 45) = 137.5, p < .001$. Results also show that more participation in community ($\beta = .10, p < .001$) and higher levels of community trust ($\beta = .05, p < .01$) were associated with higher levels of self-rated health status.

Table 3

MULTIPLE REGRESSION OF SELF-RATED HEALTH STATUS (N = 4,670)

Variables	Model 1	Model 2	Model 3
Female	.076 ***	.061 ***	.060 ***
Race (White=0):			
Black	-.075 ***	-.073 ***	-.074 ***
Hispanic	-.037 **	-.033 **	-.032 **
Others	-.080 ***	-.072 ***	-.073 ***
Age	-.043 ***	-.047 ***	-.046 ***
Education	.192 ***	.169 ***	.170 ***
Married	-.044 **	-.031 *	-.031 *
Medicaid beneficiary	-.035 *	-.038 **	-.037 **
ADLs	-.257 ***	-.243 ***	-.242 ***
Chronic conditions	-.318 ***	-.308 ***	-.307 ***
Participation		.096 ***	.071 ***
Trust		.053 **	.053 **
Female*Participation			.034 *
Constant	3.847 ***	3.488 ***	3.516 ***
F	155.70 ***	137.51 ***	127.91 ***
R-square	.328	.340	.341

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

Models 3 present the interaction terms between participants' gender and community participation. The model reveals a significant interaction between gender and community participation in the hypothesized direction ($\beta = .03, p < .05$), suggesting that female participants are more likely to have the increased effect of community participation on self-rated health status than male participants. This step increased the explained variable in self-rated health status to 34.1%, $F(13, 44) = 127.9, p < .001$. Figure 1 illustrates the pattern of this interaction: among female participants, more participation in community resulted in elevated self-rated health status. In the group of male participants, the positive effect of community participation on self-rated health status was muted.

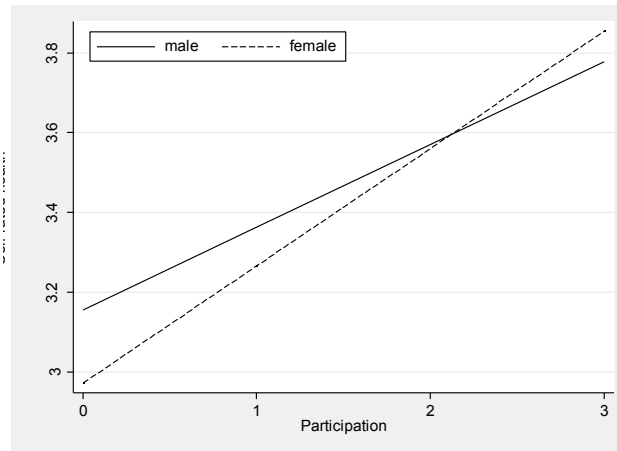


FIGURE 1. Interaction between Gender and Community Participation

Discussion

This study explored the effects of gender and roles of social capital for older adults' health perception. Findings of this study partly supported proposed three hypotheses. Gender was found to be significant to predict self-rated health: female older adults reported better health status than male counterparts. Female older adults were expected to report poorer health status, but results showed reverse direction. One possible explanation of this result is that older women are more likely to report better health status for their objective health than male older adults (Arber & Cooper, 1999). Even though older women have substantial functional disabilities, they may evaluate their health status better than their physical conditions. For example, Cagney and colleagues (2005) also found that male older adults aged 55 and older were more likely to report poor and fair health status after controlling for individual demographic and health factors.

Social capital, trust and participation, significantly improved older adults' perception for health status. As expected, social capital positively influenced older adults' health perception. Older adults with a high level of social capital may gain emotional benefits from a sense of belongingness and feeling of security (Katz, Kling & Liebman, 2000). Positive emotional status may influence older adults' evaluation on their health.

Finally, participation interacted with gender. Female older adults who participated more social activity reported better self-rated health status. Various social and health benefits are expected by participating in social activities. Social capital functions as information channels for group members. Through social relations, the group members in a network become informed about social resources and services that may impact individuals' health and well-being. Coleman (1988) argued that social organizations were a source of social capital, which were available to the community's residents. Since community participation is closely related to other types of social capital such as network size and

social support, community participation might play a pivotal role to increase access to social services, size of social networks, and social interactions with network members. Therefore, older adults in the community are able to increase their social resources by participating in community activities and being a community member. In particular, female older adults are more likely to receive social benefits from their communities (Silverstein & Waite, 1993; Schuster, Kessler, & Aseltine, 1990) because they spend more time in the community than males (Arber & Cooper, 1999). Thus, community participation not only increases social networks and social capital for older adults, but also more strongly influences health status for female older adults compared with their male counterparts (Almgren, Magarati, & Mogford, 2009).

The results identified that social capital is beneficial to older adults' subjective health status and the benefits are not the same for both gender groups. Appropriate social programs can be developed based on study results. For example, since social participation is more positively influence subjective health for older women, community agencies may develop social services for older women to increase social interactions by facilitating social participation, which may help decrease the health difference between men and women.

Despite the significance of the study, a few limitations for this study can be noted. Since this study analyzed cross-sectional data, the interpretation of the results is not causal. For further studies, thus, the use of longitudinal data would be necessary to explore the causal relationships between social capital and health status. Another limitation is that the present study does not include personality traits and psychological characteristics because the dataset does not have sufficient and reliable measures for those variables. Since personal factors significantly influence individual perception of self-rated health, future research on social capital and health in later life needs to include personal and psychological resources to explore the roles of personal resources as well as the effects of social capital on older adults' health. Future studies also need to explore the roles of other social resources such as social networks and social cohesion across social groups in later life, because social resources might be distributed unevenly, and accessibility might differ across social groups. Despite these limitations, current study contributes to research and practice on health in later life. Current study provides evidence that social resources would work differently across gender groups. Thus, practitioners need to be aware of the different effects of social resources on health in later life across social groups.

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