



Do bonding and bridging social capital affect self-rated health, depressive mood and cognitive decline in older Japanese? A prospective cohort study



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ABSTRACT

Little is known regarding the longitudinal effects of bonding and bridging social capital on health. This study examined the longitudinal associations of bonding and bridging social capital with self-rated health, depressive mood, and cognitive decline in community-dwelling older Japanese. Data analyzed in this study were from the 2010 (baseline) and 2012 (follow-up) Hatoyama Cohort Study. Bonding social capital was assessed by individual perception of homogeneity of the neighborhood (the level of homogeneity among neighbors) and of networks (the amount of homogeneous personal networks) in relation to age, gender, and socioeconomic status. Bridging social capital was assessed by individual perception of heterogeneity of networks (the amount of heterogeneous personal networks) in relation to age, gender, and socioeconomic status. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated to evaluate the effects of baseline social capital on poor health outcome at follow-up by logistic regression analysis. In total, 681 people completed baseline and follow-up surveys. The mean age of participants was 71.8 ± 5.1 years, and 57.9% were male. After adjusting for sociodemographics, lifestyle factors, comorbidity, functional capacity, baseline score of each outcome, and other bonding/bridging social capital, stronger perceived neighborhood homogeneity was inversely associated with poor self-rated health (OR = 0.55, 95% CI = 0.30–1.00) and depressive mood assessed by the Geriatric Depression Scale (OR = 0.58, 95% CI = 0.34–0.99). When participants who reported a depressive mood at baseline were excluded, stronger perceived heterogeneous network was inversely associated with depressive mood (OR = 0.40, 95% CI = 0.19–0.87). Neither bonding nor bridging social capital was significantly associated with cognitive decline assessed by the Mini-Mental State Examination. In conclusion, bonding and bridging social capital affect health in different ways, but they both have beneficial effects on the health of older Japanese. Our findings suggest that intervention focusing on bonding and bridging social capital may improve various health outcomes in old age.

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Introduction

Social capital is used to explain health disparities and promote health (Baum & Ziersch, 2003; Kawachi & Berkman, 2000;

Lindström, 2008). According to Putnam (1993), social capital refers to “features of social organization, such as trust, norms and networks that can improve the efficacy of society by facilitating coordinated actions (p. 167)”. Because social capital is an umbrella concept, subclassification of social capital into some aspects and dimensions is useful for clarifying its effect on health (e.g., Murayama, Wakui, Arami, Sugawara, & Yoshie, 2012). This could be helpful for developing an intervention program to foster social capital. To date, several classification systems for social capital have been suggested (Harpham, Grant, & Thomas, 2002; Putnam, 1993; Szreter & Woolcock, 2004) of which the concept of bonding and bridging social capital has credence. According to Szreter and

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Woolcock (2004), bonding social capital refers to aspects of “inward-looking” social networks that reinforce exclusive identities and homogeneous groups. Therefore, there are strong ties between members of a network who are similar in terms of sociodemographic or social characteristics (e.g., age, ethnicity, and social class). Bridging social capital refers to “outward-looking” social networks across different social and ethnic groups that do not necessarily share similar identities. Although the importance of distinguishing between these types of social capital is understood, few empirical studies have investigated their individual effects on health.

The first empirical study to examine the association of bonding and bridging social capital with health was reported by Mitchell and LaGory (2002). They showed that higher bridging social capital on an individual level (strength of trust and ties with others of different race and education from the respondent) was associated with less mental distress, whereas bonding social capital had the opposite association in an impoverished community. Following this study, further reports on the association of bonding and bridging social capital with health emerged. Kim, Subramanian, and Kawachi (2006) reported that bonding social capital at the individual (definition based on race/ethnicity, gender, and education) and community (aggregated based on individual responses) levels was associated with better self-rated health, but there was no such association with bridging social capital at both levels among U.S. adults. Beaudoin (2009) studied the two health outcomes of self-rated health and stress, and defined bonding and bridging social capital based on the relationships of an individual with people of (dis)similar race/ethnicity. He found that bonding and bridging social capital on an individual level were associated with better self-rated health, and that bonding social capital was associated with less stress among U.S. adults. Iwase et al. (2012) reported that in Japan, individual-level bridging social capital, which was defined by the number of heterogeneous groups that each respondent participated in, was associated with better self-rated health, particularly among women.

Despite the growing literature on evidence for an association between bonding/bridging social capital and health, this association remains inconclusive, and some issues need to be addressed. First, almost all of the previous studies used cross-sectional designs that failed to identify causality. Longitudinal studies are required to understand the effect of social capital on health. Poulsen et al. (2012) reported the only longitudinal study to date examining the effects of bonding and bridging social capital on mortality; however, they failed to find any significant link between these factors. Second, the health outcomes included by previous studies were limited. Most previous studies used either self-rated or mental health (e.g., stress) as their outcome. Exploring the effects of bonding and bridging social capital on various types of health outcomes could lead to a broader understanding of their importance, possibly leading to interventions and health policies. Third, most studies considering bonding and bridging social capital and health were conducted in Western countries. Only three studies based in Asia have been reported, including two Japanese studies (Iwase et al., 2012; Norstrand & Xu, 2012; Ueshima et al., 2010). In Japan, which has a relatively collectivist society with intense group ties, people feel comfortable under systems of mutual assurance and monitoring among residents within a community (Nakane, 1970; Yamagishi, Cook, & Watabe, 1998; Yamagishi & Yamagishi, 1994). Therefore, considering the difference in cultural and historical backgrounds between Japan and Western countries, it is important to explore the association between bonding and bridging social capital and health in Japan.

In this study, data were analyzed from a cohort study of community-dwelling older Japanese. Three types of health

outcomes were used: self-rated health (as an indicator of general health), depressive mood (as a measure of psychological health), and cognitive decline (as a measure of cognitive health). These three factors are known to effect functional decline in old age (Stuck et al., 1999). In Japan, measures of depression and cognitive decline are considered good indicators for developing policies for long-term care prevention (Ministry of Health, Labour and Welfare, 2012). The purpose of this study was to examine the longitudinal association of bonding and bridging social capital with self-rated health, depressive mood, and cognitive decline in older Japanese.

Methods

Study population

The Hatoyama Cohort Study consisted of randomly sampled community-dwelling individuals aged 65 years or older, living in the town of Hatoyama in Saitama, Japan. Hatoyama is a suburban area located 50 km northwest of central Tokyo. To recruit the study participants, we used stratified random sampling of four groups classified by age (65–74 and 75–84 years) and residential area of the town (traditional areas and newly developed areas). People with long-term care certification (levels 1–5) and those admitted to hospitals or residing in nursing homes were excluded. In addition to the random sampling recruitment, we recruited study participants using the Hatoyama town bulletin, to permit broader recruitment. Further information on sampling and the participants is described by Murayama, Nishi, et al. (2012).

After using these two methods, 751 people agreed to participate in the Hatoyama Cohort Study. Immediately before the baseline survey, we directly informed participants of the study purpose, method, survey items, and merits of participation, after which nine declined to participate in the study. As a result, a total of 742 people participated in the baseline survey in 2010. Comprehensive information was collected at face-to-face interviews. In 2012, a follow-up survey of the participants in the baseline survey was conducted. Of 742 participants, eight had died, 27 had dropped out between baseline and follow-up surveys (e.g., moved away and health-related exclusion), and 26 were unable to attend the follow-up survey (e.g., health-related reasons and schedule conflicts). In the follow-up survey, a mailed questionnaire option was offered to participants unable to attend the face-to-face interviews. As a result, 681 (91.8%) participants completed both baseline and follow-up surveys (571 attended a face-to-face interview and 110 self-completed the questionnaire at the follow-up survey).

The study protocol was reviewed and approved by the Ethical Committee of the Tokyo Metropolitan Institute of Gerontology, Japan. All subjects gave written consent to participate in this study.

Measurements

Bonding and bridging social capital

There is no standard measure of bonding and bridging social capital. Based on previous studies (Harpham et al., 2002; Kawachi, Subramanian, & Kim, 2008; Poortinga, 2012; Szreter & Woolcock, 2004), a system of assessing bonding social capital using two factors and bridging social capital by a single factor was developed in the baseline study. Previous studies from Western countries have defined bonding and bridging social capital based on relationships with racially or ethnically (dis)similar people (Beaudoin, 2009; Kim et al., 2006; Poortinga, 2012). However, because Japan has little racial and ethnic diversity, we considered that this definition was inappropriate for this study. Therefore, we focused on the (dis)similarity of relationships with regard to age, gender, and socioeconomic status (SES).

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