

Chapter 17

Social Capital and Health



Jun Aida and Katsunori Kondo

1 Introduction

Social capital (SC), “resources that are accessed by individuals as a result of their membership of a network or a group,” [1] has been considered a determinant of health [2]. People obtain various resources from social relationships, and these may affect their lives. Such phenomena are sometimes serious, and the consequences may reach beyond health. In January 2018, Tracey Crouch was appointed as the first Minister for Loneliness in the UK in move that is indicative of the worldwide concern about loneliness—the lack of social relationships—not only in terms of its effects on health, but also for the effects on the lives of individuals and on society. This chapter introduces SC with a focus on its effects on health.

Jun Aida is also the English translator for this chapter.

J. Aida (✉)

Department of Oral Health Promotion Graduate School of Medical and Dental Sciences,
Tokyo Medical and Dental University, Tokyo, Japan
e-mail: j-aida@umin.ac.jp

K. Kondo

Professor of Social Epidemiology and Health Policy, Department of Social Preventive
Medical Sciences, Center for Preventive Medical Sciences, Chiba University, Chiba, Japan

Head of Department of Gerontological Evaluation, Center for Gerontology and
Social Science, National Center for Geriatrics and Gerontology, Obu City, Aichi, Japan

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2 The Roseto Effect

In the 1950s, a strange phenomenon was discovered in the small town of Roseto, Pennsylvania, in the USA. Many of the residents of Roseto were Italian emigrants, who lived in a close-knit community. Although their lifestyles were not superior to their neighbors, it was observed that the residents of Roseto showed lower mortality from myocardial infarction than neighboring areas [3].

SC was considered to be the cause of the lower mortality in Roseto [4]. SC is a concept that has been used in various academic fields. Putnam [5] defined SC as “features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions.” Until now, epidemiology researches have reported that people who live in communities with deep trust, helping each other and enjoying social participation, have better health conditions.

3 Social Capital

There are various definitions and measurements of SC, because it has been discussed and considered in the fields of sociology, economics, and political science [6, 7]. Recently, the definition mentioned above, “resources that are accessed by individuals as a result of their membership of a network or a group,” [1] seemed suitable for social epidemiology.

In addition to this definition, there are many classifications and subordinate concepts in SC [8, 9], including classification by cognitive SC and structural SC. Cognitive SC includes cognitive components of SC such as social trust and social support, while structural SC includes concepts related to network structure such as social networks and social participation. Classification as horizontal SC and vertical SC focuses on the structure of networks: SC obtained from horizontal and vertical networks can be distinguished. Classification as bonding SC, bridging SC, and linking SC focuses on the characteristics of networks: bonding SC is obtained from close and intense social ties; bridging SC is obtained from weak and diverse social ties; and linking SC is obtained from different power levels and positions. Following the background and hypothesis of a social epidemiological study as needed, these classifications and subordinate concepts should be selected as appropriate.

Figure 17.1 shows the theoretical explanation of the pathways between community-level SC and health. Living in a community with rich SC produces various resources. Social influence and informal social control affect health behaviors. Collective efficacy and social security contribute to establishment of health care policies. SC also buffers psychological stress. These mechanisms from community-level SC are considered to promote the health of residents [1].

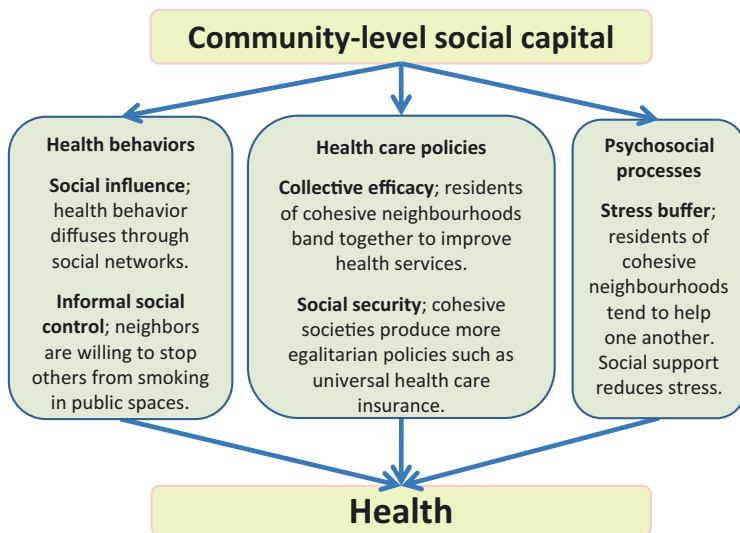


Fig. 17.1 Theoretical explanation of the pathways between community-level social capital and health

4 Individual and Community Social Capital and Multilevel Analysis

In social epidemiology, the distinction of individual-level SC and community (neighborhood)-level SC is an important issue. Studies often use components of SC such as social participation, social trust, and social networks as the variables of individual-level SC. Aggregated values of individual-level SC or community variables such as voting rate are often used as the variables of community-level SC.

Social epidemiology studies using multilevel analysis have revealed that SC in the community affects the health of residents regardless of individual-level SC. Such types of multilevel studies are interesting because they indicate that the health of an individual is not only determined by the individual's characteristics but also by the social environments in which they live. Such community-level SC also contributes to health inequalities between areas or groups. This community-level effect is called the "contextual effect". By contrast, the "compositional effect" causes some health inequality owing to differences among individuals in areas or groups. The concept of the contextual effect was new when SC studies began in the health field. Therefore, studies of SC have emphasized community-level SC.

However, studies of individual-level SC also seem to be important, especially when determining the mechanism of SC in health. Recent studies of social epidemiology seem to focus more on individual-level variables related to SC.

5 Social Capital and Health: Benefits and Downsides

Since the late 1990s, associations between SC and various health outcomes have been examined. Many studies of SC have considered effects on mental health, but other studies have also focused on other outcomes. SC is considered to affect mental well-being and to reduce the risk of mental health problems [10–12], mortality [13], and chronic noncommunicable diseases such as diabetes [14, 15], cardiovascular disease [13, 15], cancer [13], and oral diseases [16]. Recently, intervention studies relating to SC have suggested beneficial effects of SC on the health of older people [17, 18]. Although the associations of SC and health are not always robust, and high-quality research is required, SC generally seems to be beneficial for health.

Studies have also suggested a buffering effect of SC on socioeconomic inequalities in health [19, 20], and SC is considered a beneficial resource for health in developing countries [21]. In spite of these positive effects, we should also consider the potential downsides of SC in terms of health [22]. A systematic review reported behavioral contagion cross-level interactions as the primary negative effect of SC on health. As a behavioral contagion, SC may contribute to the diffusion of harmful health behaviors and negative health. A study that examined cross-level interactions reported that people with low trust experienced more harmful health effects in high-trust communities. Such downsides should be considered when SC is used for health promotion.

6 Social Capital Studies in Japan

There are relatively large reports of SC and health in Japan, even though SC studies have mainly been conducted in Western countries [23]. Although fewer longitudinal studies of community-level SC were reported, several longitudinal studies have been conducted in Japan; the outcomes considered were functional disability [24], cognitive decline [25], and oral health [26]. Many studies focused on the components of individual-level SC such as social support, social participation, social networks, and social trust. There were also studies of the development of measurements of community-level SC [27]. As a result of these studies, the Japanese government includes the concept of SC in the health field, especially in the prevention of functional disabilities among the older population. Therefore, levels of SC in communities are sometimes measured for health policy planning. In this section, two recent important topics are introduced: SC intervention and SC in the disaster context.

6.1 Intervention Study of Social Capital and Health

Possibilities for interventions that improve SC and promote health have been reported [17, 18]. In Japan, local governments and researchers in the Japan Gerontological Evaluation Study (JAGES) conduct a community-based intervention program that aims to improve SC and health. The Taketoyo town government has established community salons, where older people participate in several activities; the salon is managed by older volunteers. This community-based intervention program provides the opportunity for improved social participation and interaction among older people and reduces the problem of being homebound, which increases the risk of frailty. Its effects on health were evaluated by researchers, showing reduction in the risks of poor self-rated health [28], onset of functional disability [29], and cognitive decline [30]. This kind of community intervention program has been introduced to other municipalities in Japan, and further reports on its effects in other municipalities are anticipated.

6.2 Social Capital and Health in a Post-disaster Context

The health effects of natural disasters are enormous around the world, making it an important public health issue [31]. Disasters change various social determinants of health including SC. SC is considered to play an important role in mitigating the health effects of disasters [32–34]; for example, as in the Great East Japan Earthquake and Tsunami in 2011 during which 15,894 people lost their lives, and 2546 people remain missing. The Tohoku area was the main affected area, and one of the areas, Iwanuma City, was the site of a JAGES cohort health survey before and after the disaster. Studies in Iwanuma contribute important insights to SC and health in a post-disaster context.

SC prior to the disaster contributed to preventing incidents of post-traumatic stress disorder following the disaster [35]. Because the tsunami destroyed housing, residents were obliged to move to other residences. The detrition of SC owing to the disaster increased the risk of cognitive decline [25], and obligatory relocation changed the SC of disaster survivors [36]. As an important implication of this study, group relocation to temporary housing with neighbors by the government aimed at maintaining social networks of neighbors, and was reported to protect SC. Other studies showed that physical exercise and participation in sports activity groups reduced the risk of depression after a disaster [37]. Therefore, intervention to provide opportunities for sports activity group participation may reduce risk of depression among disaster survivors.

7 Summary

SC is considered a social determinant of health. SC in a community affects the health of residents regardless of individual characteristics. Recent studies have suggested the possibility that intervention to improve SC reduces health risks. SC is also important in the post-disaster health of survivors. Studies are required to determine the effect of SC on health as a health promotion resource of communities.

References

1. Kawachi I, Berkman LF. Social capital, social cohesion, and health. In: Berkman LF, Kawachi I, Glymour MM, editors. *Social epidemiology*. 2nd ed. Oxford: Oxford University Press; 2014. p. 290–319.
2. Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Discussion paper for the commission on social determinants of health. Geneva: WHO; 2007.
3. Egolf B, Lasker J, Wolf S, Potvin L. The Roseto effect: a 50-year comparison of mortality rates. *Am J Public Health*. 1992;82:1089–92.
4. Putnam R. *Bowling alone: the collapse and revival of American community*. New York, NY: Simon and Schuster; 2000.
5. Putnam RD. *Making democracy work: civic traditions in modern Italy*. Princeton, NJ: Princeton University Press; 1993. p. 167.
6. Kawachi I, Subramanian SV, Kim D. *Social capital and health*. New York, NY: Springer; 2008.
7. Francis P. *Social capital at the World Bank: strategic and operational implications of the concept*; 2002.
8. Harpham T. The measurement of community social capital through surveys. In: Kawachi I, Subramanian SV, Kim D, editors. *Social capital and health*. New York, NY: Springer; 2008. p. 51–62.
9. Islam MK, Merlo J, Kawachi I, Lindstrom M, Gerdtham UG. Social capital and health: does egalitarianism matter? A literature review. *Int J Equity Health*. 2006;5:3.
10. Ehsan AM, De Silva MJ. Social capital and common mental disorder: a systematic review. *J Epidemiol Community Health*. 2015;69:1021–8.
11. McPherson KE, Kerr S, McGee E, Morgan A, Cheater FM, McLean J, et al. The association between social capital and mental health and behavioural problems in children and adolescents: an integrative systematic review. *BMC Psychol*. 2014;2:7.
12. Nyqvist F, Forsman AK, Giuntoli G, Cattani M. Social capital as a resource for mental well-being in older people: a systematic review. *Aging Ment Health*. 2013;17:394–410.
13. Choi M, Mesa-Frias M, Nuesch E, Hargreaves J, Prieto-Merino D, Bowling A, et al. Social capital, mortality, cardiovascular events and cancer: a systematic review of prospective studies. *Int J Epidemiol*. 2014;43:1895–920.
14. Flor CR, Baldoni NR, Aquino JA, Baldoni AO, Fabbro ALD, Figueiredo RC, et al. What is the association between social capital and diabetes mellitus? A systematic review. *Diab Metab Syndr*. 2018;12:601.
15. Hu F, Hu B, Chen R, Ma Y, Niu L, Qin X, et al. A systematic review of social capital and chronic non-communicable diseases. *Biosci Trends*. 2014;8:290–6.
16. Batra M, Tangade P, Rajwar YC, Dany SS, Rajput P. Social capital and oral health. *J Clin Diagn Res*. 2014;8:Ze10–1.
17. Coll-Planas L, Nyqvist F, Puig T, Urrutia G, Sola I, Monteserin R. Social capital interventions targeting older people and their impact on health: a systematic review. *J Epidemiol Community Health*. 2017;71:663–72.

18. Flores EC, Fuhr DC, Bayer AM, Lescano AG, Thorogood N, Simms V. Mental health impact of social capital interventions: a systematic review. *Soc Psychiatry Psychiatr Epidemiol.* 2018;53:107–19.
19. Uphoff EP, Pickett KE, Cabieses B, Small N, Wright J. A systematic review of the relationships between social capital and socioeconomic inequalities in health: a contribution to understanding the psychosocial pathway of health inequalities. *Int J Equity Health.* 2013;12:54.
20. Vyncke V, De Clercq B, Stevens V, Costongs C, Barbareschi G, Jonsson SH, et al. Does neighbourhood social capital aid in levelling the social gradient in the health and well-being of children and adolescents? A literature review. *BMC Public Health.* 2013;13:65.
21. Story WT. Social capital and health in the least developed countries: a critical review of the literature and implications for a future research agenda. *Glob Public Health.* 2013;8:983–99.
22. Villalonga-Olives E, Kawachi I. The dark side of social capital: a systematic review of the negative health effects of social capital. *Soc Sci Med.* 2017;194:105–27.
23. Murayama H, Fujiwara Y, Kawachi I. Social capital and health: a review of prospective multi-level studies. *J Epidemiol.* 2012;22:179–87.
24. Aida J, Kondo K, Kawachi I, Subramanian SV, Ichida Y, Hirai H, et al. Does social capital affect the incidence of functional disability in older Japanese? A prospective population-based cohort study. *J Epidemiol Community Health.* 2013;67:42–7.
25. Hikichi H, Tsuboya T, Aida J, Matsuyama Y, Kondo K, Subramanian SV, et al. Social capital and cognitive decline in the aftermath of a natural disaster: a natural experiment from the 2011 great east japan earthquake and tsunami. *Lancet Planet Health.* 2017;1:e105–e13.
26. Koyama S, Aida J, Saito M, Kondo N, Sato Y, Matsuyama Y, et al. Community social capital and tooth loss in Japanese older people: a longitudinal cohort study. *BMJ Open.* 2016;6:e010768.
27. Saito M, Kondo N, Aida J, Kawachi I, Koyama S, Ojima T, et al. Development of an instrument for community-level health related social capital among Japanese older people: the JAGES Project. *J Epidemiol.* 2017;27:221–7.
28. Ichida Y, Hirai H, Kondo K, Kawachi I, Takeda T, Endo H. Does social participation improve self-rated health in the older population? A quasi-experimental intervention study. *Soc Sci Med.* 2013;94:83–90.
29. Hikichi H, Kondo N, Kondo K, Aida J, Takeda T, Kawachi I. Effect of a community intervention programme promoting social interactions on functional disability prevention for older adults: propensity score matching and instrumental variable analyses, JAGES Taketoyo study. *J Epidemiol Community Health.* 2015;69:905–10.
30. Hikichi H, Kondo K, Takeda T, Kawachi I. Social interaction and cognitive decline: results of a 7-year community intervention. *Alzheimers Dement (N Y).* 2017;3:23–32.
31. Guha-Sapir D, Hoyois P, Below R. Annual disaster statistical review 2013 the numbers and trends. Brussels: Center for Research on the Epidemiology of Disasters; 2014.
32. Aida J, Kawachi I, Subramanian SV, Katsunori K. Disaster, social capital, and health. In: Kawachi I, Takao S, Subramanian SV, editors. *Global perspectives on social capital and health.* New York, NY: Springer; 2013. p. 167–87.
33. Noel P, Cork C, White RG. Social capital and mental health in post-disaster/conflict contexts: a systematic review. *Disaster Med Public Health Prep.* 2018;12:791–802.
34. Aldrich DP. *Building resilience: social capital in post-disaster recovery*, vol. xii. Chicago, IL: The University of Chicago Press; 2012. 232 pages.
35. Hikichi H, Aida J, Tsuboya T, Kondo K, Kawachi I. Can community social cohesion prevent posttraumatic stress disorder in the aftermath of a disaster? A natural experiment from the 2011 Tohoku earthquake and tsunami. *Am J Epidemiol.* 2016;183:902–10.
36. Hikichi H, Sawada Y, Tsuboya T, Aida J, Kondo K, Koyama S, et al. Residential relocation and change in social capital: a natural experiment from the 2011 great east japan earthquake and tsunami. *Sci Adv.* 2017;3:e1700426.
37. Tsuji T, Sasaki Y, Matsuyama Y, Sato Y, Aida J, Kondo K, et al. Reducing depressive symptoms after the great east japan earthquake in older survivors through group exercise participation and regular walking: a prospective observational study. *BMJ Open.* 2017;7:e013706.

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