Opinion

Epidemic-specific social capital and its impact on physical activity and health status

Yanjie Biana,b

a Institute for Empirical Social Science Research, Xi’an Jiaotong University, Xi’an 710049, China
b Department of Sociology, University of Minnesota, Minneapolis, MN 55455, USA

Received 31 May 2020; revised 29 June 2020; accepted 3 July 2020
Available online 30 July 2020

1. Epidemic-specific social capital

The outbreak of coronavirus disease 2019 (COVID-19) hit a totally unprepared world. “There’s no magic bullet. There’s no magic vaccine or therapy. It’s just behaviors.”1 Dr. Birx’s remarks were made on March 31, 2020, during a coronavirus news conference, and they are still true today. Because there are no vaccines to resist or medicines to cure the virus, public health authorities have recommended a number of behavioral adjustments, including such measures as community lockdowns, stay-at-home orders, and social distancing, which have been imposed in administrative orders by some, but not all, state and city governments around the world.3 The essence of these behavioral adjustments is to try to reduce the infection to the minimum and to prevent the virus from spreading to the vast majority of the population by means of physical isolation.4

Physical isolation alone cannot work effectively to combat the COVID-19 pandemic. Human beings are social animals, and the socially isolated are the most vulnerable. There has been a stream of evidence on the severe consequences of social isolation on body weight and obesity, health deterioration, and mental breakdowns,5 especially among the elderly.6 The newest social surveys from around the world demonstrate that the socially isolated do worst on a composite wellbeing scale in both developed and developing countries.7 These results explain why caring about the socially isolated has been at the center stage of public health professionals’ work during the difficult times of COVID-19.8 Retaining a certain degree of social connectedness is a common recommendation from health professionals to solve the problems.5–8

In this opinion paper, I propose a new concept called epidemic-specific social capital in order to meet this objective. Social capital refers to the aggregate and interpersonal resources that are embedded in and can be mobilized from the networks of ongoing social relations, and a general, context-free version of social capital functions to reduce constraints and facilitate expressive and instrumental actions broadly defined.9–11 Because expressive and instrumental actions are often-times context specific, social network analysts have offered different measuring devices to capture context-specific features of social capital, such as discussion networks,12 job search networks,13 New Year visitation networks,14 event contact networks,15 and Chinese guanxi networks.16 Contextualized in a pandemic crisis, epidemic-specific social capital refers to the social resources that are generated from the networks of ongoing social relations under conditions of physical isolation in a situation such as the COVID-19 pandemic.

Epidemic-specific social capital is a new concept. This is the social capital for combating the COVID-19 pandemic. I define it by the intensity and extensity of an individual’s social connectedness under conditions of physical isolation due to the COVID-19 crisis. It functions to strengthen one’s intimate circles and maintain one’s distant alters via online communication, thus producing anti-epidemic behaviors and outcomes.

Fig. 1 depicts the conceptual structure of epidemic-specific social capital. It has 2 internal constructs and 1 external condition. The external condition is the varying degrees of physical isolation during the pandemic. It refers to the extent to which an individual is physically isolated from others (apart from family members). A dangerous feature of COVID-19 is that an infected person may appear to have symptoms 2–14 days after exposure to the virus.17 Thus, the virus has the ability and power to spread through person-to-person contact without people’s awareness of it. In the absence of preventive vaccine or effective medical treatment, the stay-at-home orders and
Community lockdowns are among the higher-degree measures used to stop the virus spreading. In the meantime, essential services are still being provided to sustain daily livelihood and help the infected, making it necessary for using social distancing as a lower-degree measure of physical isolation. Physical isolation is the necessary condition for the emergence and functioning of epidemic-specific social capital.

The first internal construct of epidemic-specific social capital is the strengthening of one’s intimate circles. This is placed on the upper corner to the left of Fig. 1. People’s intimate circles consist of family ties, kin and pseudo-kin relations, and other close social contacts, which form an individual’s core personal networks as demonstrated in discussion networks in the United States and New Year visitation networks in China. One consensus among scholars is that networks of intimate circles function as bonding social capital. When people stay at home for a long period of time and in a continuous manner during the pandemic, however, everyday interactions in the domestic sphere generate both positive and negative consequences. Nonetheless, it is reasonable to expect that the stronger intimate circles one has maintained, the more social support one can gain from his/her intimate circles, and the greater social ability one has for positively living through the difficult times of COVID-19.

The second internal construct of epidemic-specific social capital is to remain connected to distant alters. This is displaced on the upper corner to the right of Fig. 1. Distant alters include acquaintances, online friends and networkers, and known or unknown others with whom people exchange information, which are often termed weak ties or bridging social capital by scholars. Weak ties are known to be multidimensional and can effectively transmit nonredundant information across social groups and other structural boundaries, so they are bridges for the “flow of soul”. Bridging social capital of this nature is especially important during the pandemic crisis because diverse, timely, and nonredundant information will keep people alert, informed, and composed in the face of changing situations and unexpected consequences of the coronavirus pandemic. Thus, the more connected one remains to distant alters, the greater availability of context-specific information one keeps acquiring, and the more resources one has in coping with COVID-19.

2. The significance of epidemic-specific social capital

In this section, I focus on the potential impact of epidemic-specific social capital on physical activity and health outcomes. A theoretical model is presented in Fig. 2.

In the center of Fig. 2 is epidemic-specific social capital. The left-side arrow indicates that epidemic-specific social capital varies across individuals and social groups by gender, age, education, occupation, income, and housing—the common variables of social stratification. This variable list is open, as hinted by the dots at the end of the list, because other variables of socioeconomic importance may also be relevant for epidemic-specific social capital. We have learned a great deal about intergroup variations in social capital from prior studies: social capital is generally higher for men than for women, higher for middle-aged than for younger- or older-aged, higher for the higher-educated than for the lower-educated, and higher for people with higher income and bigger housing. These intergroup variations may well apply to epidemic-specific social capital.

Fig. 1. A conceptual model for epidemic-specific social capital.

Fig. 2. Impact of epidemic-specific social capital on physical activity and health status.
2.1. Proposition 1

What does epidemic-specific social capital mean for physical activity and health outcomes? The arrow in the upper right corner implies a proposition that one’s epidemic-specific social capital will maintain and perhaps increase one’s physical activity during the pandemic (Proposition 1). There are many different forms of physical activity, including indoor and outdoor activities. Prior to the outbreak of COVID-19, empirical studies from around the world support this proposition as people with higher social capital are more likely to participate in physical exercises and sports in America, Australia, Europe, Japan, and China. Research has shown that sport lovers influence their connected others to participate in physical activity and sports, and this form of sport social capital is widely observed among relatives, friends, neighbors, and colleagues in developed and developing countries.

During the COVID-19 pandemic, both indoor and especially outdoor activities are under regulation of social distancing. In these circumstances, one can expect the following hypotheses:

Hypothesis 1.1. The closer intimate circle to which one is attached, the more rational and informed response to COVID-19, and the higher probability for one to participate in well-regulated indoor and outdoor physical activities during the pandemic.

Hypothesis 1.2. The more diverse alters to whom one is connected, the more rational and informed response to COVID-19, and the higher probability for one to participate in well-regulated indoor and outdoor physical activities during the pandemic.

2.2. Proposition 2

The lower right arrow in Fig. 2 implies another proposition: one’s epidemic-specific social capital will maintain and perhaps increase one’s physical and mental health statuses during the pandemic (Proposition 2). Under a normal lifestyle without epidemic diseases, social capital is a great source of motivation, encouragement, and support that increase people’s physical and mental health conditions. Under the conditions of the coronavirus crisis, these social capital mechanisms are expected to matter more. First, closer intimate circles are sources of social support, motivation to participate in household chores and other physical activities, as well as encouragement to continue to work during the pandemic, and all of these forms of bonding social capital will help people to keep physical and mental health conditions. Second, the more distant and diverse alters to whom one continues to be connected via online communication during the pandemic, the more timely and nonredundant information they gain from these connections will lead them to have a rational and more informed response to COVID-19, which in turn result in participation in indoor and outdoor physical activities and increase health conditions both physically and mentally. In conclusion, epidemic-specific social capital makes a good deal of contributions to people’s physical activity and health status during the pandemic.

The discussed potential impacts of epidemic-specific social capital will not be taken seriously until an adequate research design carrying out the collection of data to test the hypotheses that have been derived from the three theoretical propositions proposed. My research team has already conducted a survey of how Chinese WeChat networkers responded to COVID-19 pandemic with a sample size of 3009 persons, in which variables relevant to the conceptual and theoretical models of this opinion paper were included. The design and some results of this survey are available elsewhere.

3. Concluding remarks

The new concept of epidemic-specific social capital is a version of social capital emerging during an epidemic crisis such as the COVID-19 pandemic. Physical isolation due to the pandemic is the condition under which this epidemic-specific social capital emerges to help people fight against the viral spreading. The first internal construct of the concept refers to the strengthening of intimate circles to which an individual is attached, and these are the sources of motivation, encouragement, influence, and support that make the individual to actively participate in well-regulated indoor and outdoor physical activities during the pandemic, keeping one’s physical and mental health status in good shape. The second internal construct of the concept refers to the maintenance of an individual’s connections to distant alters most likely through online communication during the pandemic, and the timely, diverse, and nonredundant information they gain from these connections will lead them to have a rational and more informed response to COVID-19, which in turn result in participation in indoor and outdoor physical activities and increase health conditions both physically and mentally. In conclusion, epidemic-specific social capital makes a good deal of contributions to people’s physical activity and health status during the pandemic.

Hypothesis 2.2. The more diverse alters to whom one is connected, the more rational and informed response to COVID-19, and the more likely that one can stay healthy both physically and mentally during the pandemic.

Hypothesis 3. The greater participation one has in well-regulated indoor and outdoor physical activities, the greater probability one will stay healthy both physically and mentally during the pandemic.
for their helpful comments. I have enjoyed working with my research team of young scholars, who participated in collections of survey and online data for testing the broader implications of the new concept epidemic-specific social capital, which include variables on physical activity and perceived health status. They are Xiaoxian Guo, Xiaolin Lu, Xulei Ma, and Xiaolei Miao, all at Institute for Empirical Social Science Research, Xi’an Jiaotong University. Finally, I am indebted to Peter Bian, Shenyang Guo, Xiaoxian Guo, and Yaojun Li for their useful comments and edits on an early draft of this paper, and to Lei Zhang for his technical assistance with the making of figure files.

Competing interests

The author declares that he has no competing interests.

References

1. Birx D. Coronavirus Task Force news conference at the White House. March 31, 2020. Washington, DC.
2. Matthews S. COVID-19 vaccine update: more than 80 under development. Available at: https://news.cuanschutz.edu/news-stories/covid-19-vaccine-update-over-80-under-development. [accessed 24.05.2020].
3. United Nations Educational, Scientific and Cultural Organization (UNESCO). COVID-19 impact on education. Available at: https://en.unesco.org/covid19/educationresponse. [accessed 23.05.2020].
4. World Health Organization. WHO coronavirus disease (COVID-19) dashboard. Available at: https://covid19.who.int?gclid=EAIa. [accessed 23.05.2020].
5. Cacioppo JT, Cacioppo S. Social relationships and health: the toxic effects of perceived social isolation. *Soc Personal Psychol Compass* 2014;8:58–72.
6. Flowers L, Houser A, Noel-Miller C, Shaw J, Bhattacharya J, Schoemaker L, et al. Medicare spends more on socially isolated older adults. Available at: https://www.aarp.org/ppi/info-2017/medicare-spends-more-on-socially-isolated-old-adults.html. [accessed 23.05.2020].
7. Bian Y, Zhang L, Gao Y. Social bonding and subjective wellbeing: findings from the 2017 ISSP module. *Int J Sociol* 2020;50:26–47.
8. Tan E. How to fight the social isolation of coronavirus. Available at: https://www.aarp.org/health/conditions-treatments/info-2020/coronavirus-social-isolation-loneliness.html. [accessed 24.05.2020].
9. Bourdieu P. The forms of capital. In: Richardson JG, editor. *Handbook of theory and research for the sociology of education*. Westport, CT: Greenwood Press; 1986.p.241–58.
10. Coleman JS. Social capital in the creation of human capital. *Am J Sociol* 1988;94:95–120.
11. Lin N. Social capital: a theory of social structure and action. Cambridge, UK: Cambridge University Press; 2001.
12. Marsden PV. Core discussion networks of Americans. *Am Sociol Rev* 1987;52:122–31.
13. Granovetter M. Getting a job: a study of contacts and careers. Cambridge, MA: Harvard University Press; 1974.
14. Bian Y, Breiger R, Davis D, Galaskiewicz J. Occupation, class, and social networks in urban China. *Soc Forces* 2005;83:1443–68.
15. Burt RS, Bian Y, Opper S. More or less guanxi: trust is 60% network context, 10% individual difference. *Soc Network* 2018;54:12–25.
16. Bian Y. Guanxi: how China works. Cambridge, UK: Polity Press; 2019.
17. Centers for Disease Control and Prevention (CDC). Symptoms of coronavirus. Available at: https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html. [accessed 24.05.2020].
18. Putnam RD. Bowling alone: the collapse and revival of American community. New York, NY: Simon & Schuster; 2000.
19. McGarry P. When family conflict arises: how to cope during COVID-19. Available at: https://www.valleyyouthhouse.org/when-family-conflict-arises-how-to-cope-during-covid-19/. [accessed 24.05.2020].
20. Granovetter M. The strength of weak ties. *Am J Sociol* 1973;78:1368–80.
21. Marsden P, Campbell K. Measuring tie strength. *Social Forces* 1984;63:482–501.
22. Granovetter M. Getting a job: a study of contacts and careers (2nd ed). Chicago, IL: University of Chicago Press; 1995. p.139–82.
23. Li Y. Social capital in sociological research: conceptual rigour and empirical application. *Handbook of research methods and applications in social capital*. Cheltenham, UK: Edward Elgar Publishing; 2015.p.47–59.
24. Bian Y. The formation of social capital among Chinese urbanites: theoretical explanation and empirical evidence. In: Lin N, Erickson B, editors. *Social capital: an international research program*. Oxford and New York: Oxford University Press; 2008.p.81–104.
25. Lin N, Fu Y, Chen CJ, editors. *Social capital and its institutional contingency: a study of the United States, China and Taiwan*. London, UK: Routledge; 2014.
26. World Health Organization. Global recommendations on physical activity for health. Available at: https://www.who.int/dietphysicalactivity/factsheets/en/. [accessed 25.05.2020].
27. Zakus D, Skinner J, Edwards A. Social capital in Australian sport. *Sport in Society* 2009;12:986–98.
28. Phua J. Use of social networking sites by sports fans: implications for the creation and maintenance of social capital. *J Sports Media* 2012;7:109–32.
29. Scippel O. Sports in civil society: networks, social capital and influence. *Eur Socio Rev* 2008;24:69–80.
30. Okayasu I, Kawahara Y, Yogawa H. The relationship between community sport clubs and social capital in Japan: a comparative study between the comprehensive community sport clubs and the traditional community sports clubs. *Int Rev Soc Sport* 2010;45:163–86.
31. Li HT, Guo XZ. Sport developments among urban residents in sociological perspective: a panel study of 15 years of change in Chenzhou City, Hunan Province (社会学视角下城市群众体育发展的纵向性研究). *China Sociological Review* 2017;38:110–5. [in Chinese].
32. Song L, Lin N. Social capital and health inequality: evidence from Taiwan. *J Health Soc Behav* 2009;50:149–63.
33. Bian Y, Xiao X, Lu X, Ma X, Guo X. The emergence of a COVID-19 related social capital: the case of China. *Int J Sociol*. 2020. doi:10.1080/00207569.2020.1802141. in press.
34. Bian Y, Ma X, Guo X, Xiao X, Lu X. The theorization of anti-epidemic social capital and its behavioral implications (防范社会资本的理论建构与行为意义). *Journal of Xi an Jiaotong University (Social Science)* (西安交通大学学报(社会科学版)) 2020;40:1–11. [in Chinese].