

Topics: Recent topics in public health in Japan 2020

< Review >

Social capital in disaster-affected areas

SASAKI Yuri¹⁾, AIDA Jun²⁾, MIURA Hiroko¹⁾

¹⁾Department of International Health and Collaboration, National Institute of Public Health

²⁾Department of International and Community Oral Health, Tohoku University Graduate School of Dentistry

Abstract

Natural disasters have increased in recent years. Although a physical infrastructure is important to reduce disaster damage, it has its limits. It has been pointed out that attention should be paid to the social infrastructure. In this paper, we focus on social capital, which is attracting attention as a social infrastructure that is one of the social determinants of health, and give an overview of its impact on disaster-affected areas. Various studies have shown that a region with rich social capital recovers its social and physical environment, including local infrastructure, community and individual health, faster. Social support, social participation, and informal social controls provided by social capital also improve disaster preparedness and resilience of individuals and the community before a disaster occurs. However, social capital also has a negative side. While paying attention to the negative aspects, the creation of social capital during normal times will contribute to disaster mitigation.

keywords: Social capital, social determinants of health, natural disaster

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I. Introduction

1. Social determinants of health in disaster-affected areas

Health is determined by socioeconomic factors including the environment as well as individual habits and inheritance (Figure 1), and its mechanism is gradually being elucidated. WHO issued a report entitled, “Social determinants of health.” That report indicated the solid fact of the impact of socio-economic factors on health, and the need to change socio-economic factors [1]. This social determinant has also been shown to affect the health of survivors in disaster-affected areas [2].

Due to the increasing trend of natural disasters in recent years, many people die every year, which puts a heavy burden on survivors [3,4]. Under these circumstances, the physical infrastructure, including buildings, seismic standards and breakwaters, is important to reduce disaster damage. However, it has been found that there are

also limits. In fact, the tsunami destroyed the breakwater during the Great East Japan Earthquake, and it was clear that strengthening of the physical infrastructure alone was not sufficient. In recent years, it has been pointed out that attention should also be paid to social infrastructures [5-7]. We believe that exploring of social determinants of health will help to establish effective measures based on evidence in disaster-affected areas.

The usefulness of social capital has been pointed out for regional and individual preparation for disasters, relief activities immediately after disasters, and medium- to long-term recovery [6-10]. In this paper, we focus on social capital, which is attracting attention as a social infrastructure that is one of the social determinants of health, and gives an overview of its impact on disaster-affected areas. We report on the role of each phase before and after an earthquake, the usefulness of social capital for disaster recovery, and the negative aspects of social capital as well.

Corresponding author: SASAKI Yuri
2-3-1 Minami, Wako, Saitama 351-0197, Japan.
Tel: +81-48-458-6149
E-mail: sasaki.yaa@niph.go.jp

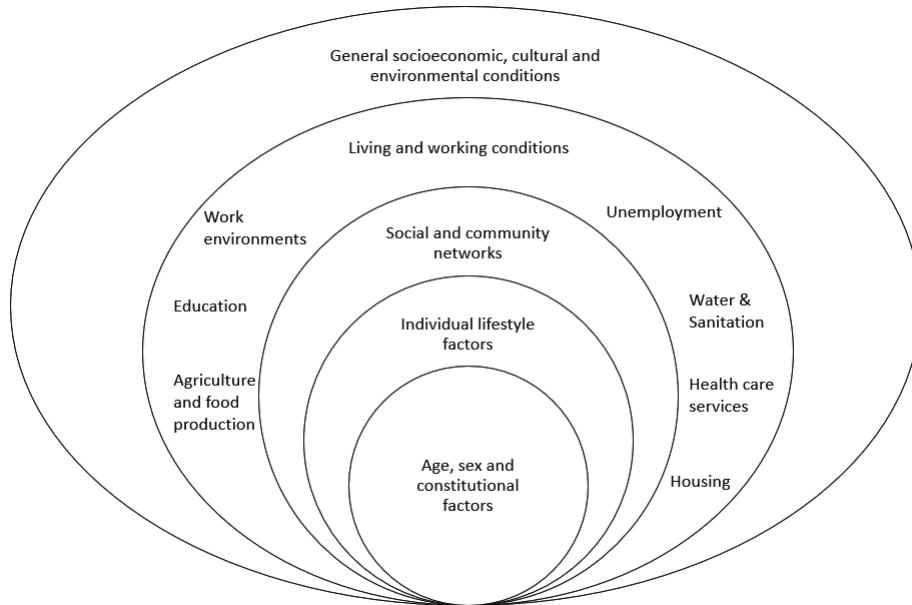


Figure 1 The main determinants of health

(Created by the author in reference to, "The main determinants of health," Policies and strategies to promote social equity in health, 1991)

2. What is "social capital"?

There are some definitions of social capital. Carpiano has conceptualized the theoretical model of social capital as existing in the neighborhood [2,11] (Figure 2). Here, we adopt "resources that are accessed by individuals as a result of their membership of a network or a group" as defined by two social epidemiologists, Kawachi and Berkman [12].

There are three categories of social capital: bonding, bridging, and linking [13]. Bonding social capital refers to

resources that are accessed within social groups whose members are alike ("homophilous") in terms of their social identity, such as class or race. Bridging social capital refers to resources accessed by individuals and groups through connections that cross class, race/ethnicity, and other boundaries of social identity. It can incorporate a subset of linking social capital that usually refers to links with external sources of power such as local government and other controlling forces. Linking social capital refers to relations

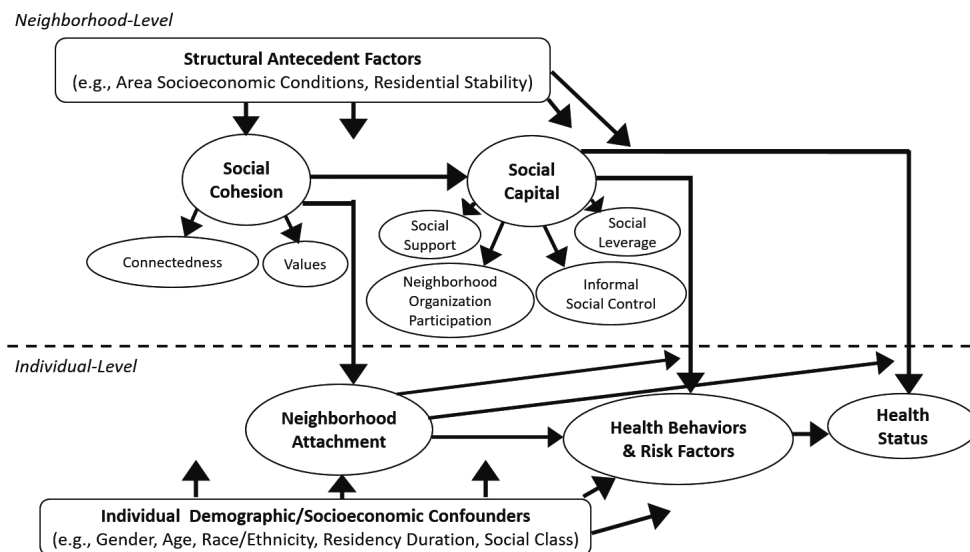


Figure 2 Conceptual model of neighborhood social capital processes affecting individual health outcomes

(Created by the author in reference to "Conceptual model of neighborhood social capital processes on individual health outcomes" Social Capital and Health, 2008)

between individuals and groups in different social strata in a hierarchy where power, social status and wealth are accessed by different groups [14,15].

II. Influence of social capital in disaster-affected areas

Social support, social participation, and informal social controls provided by social capital improve disaster preparedness and resilience of individuals and communities before a disaster occurs [16,17]. Public support is not always available immediately at and after a disaster. Channels that bring people together and obtain various kinds of information during relief and subsequent evacuation activities are considered to be better in areas with rich social capital. Various studies have shown that the social and physical environment, including local infrastructure, community and individual health, recovers faster in a region with rich social capital [6,18-20]. This is because various types of social capital are involved in unity among local residents and cooperation with external Nonprofit Organizations (NPOs) and the government. In this way, social capital is believed to contribute to protect people against and recover from disasters involving various situations before and after the disaster. For this reason, social capital has the potential to improve post-disaster health.

Hobfoll et al. identified five empirically supported interventional principles that should be used to guide, and provide information on, interventional and preventive efforts during the early to mid-term phases following disasters and mass violence [21]. These are promoting 1) a sense of safety, 2) calming, 3) a sense of self- and community efficacy, 4) connectedness, and 5) hope. Among these, social capital especially has the role of enriching and strengthening connectedness among people. Regardless of the kind of natural disaster, social capital is also considered to improve mental health by reducing stress [22]. In addition to these psychological pathways, social capital is believed to help rebuild communities affected by disasters, which in turn reduces the long-term health effects of disasters and improves mental and physical health. In fact, it was reported that social capital is acting in a protective manner against post-traumatic stress disorder (PTSD) [23-26], anxiety [25], and depression [25,27] after a disaster, which was also confirmed by systematic review [28]. Social capital also plays a role to promote healthy dietary intake in disaster-affected areas [29]. However, it has been shown that high social capital increases the possibility of drinking after a disaster [30]. Aldrich notes that there are regional differences in disaster recovery and shows that these regional differences can be explained by social capital [8].

In a survey of older people who had not been certified to receive long-term care in Iwanuma City, Miyagi Prefecture, which suffered enormous damage due to the Great East Japan Earthquake, the social determinants of health were investigated using natural experimental data. The study did not only show the impact on mental health caused by the disaster [31,32], but also the impact on organic diseases, such as obesity [33], cognitive decline [34], circulatory metabolic diseases [35], and instrumental activities of daily living (IADL) decline [36].

In addition, it clarified the reduction in depression by group exercise [37], the reduction in insomnia through instrumental support [38], alleviation of dementia progression due to social ties [39], and the relationship between the strength of social ties in the region and mitigation of the progression of dementia, even if individual ties are weak [40].

III. Three phases of social capital functioning in disaster-affected areas

A growing body of literature supports the integral role of social capital in all phases of disaster management i.e., 1. preparedness, 2. mitigation, response, and 3. recovery [2].

Though traditional disaster management emphasizes the value of physical, economic, and human capital, increasing research supports the notion that such dimensions as social cohesion and social networks particularly apply to preparedness work [2,41,42].

1. Pre-disaster: preparedness

It has been reported that accumulation of experience at the meeting place of local women's disaster prevention clubs was useful during the period until public support was provided after the Great East Japan Earthquake [43]. The higher the social capital between residents before a disaster occurs, the more disaster prevention measures and disaster drills are organized by residents' associations and community organizations. This is thought to reduce disaster damage. In addition, local governments, companies, hospitals, etc. often have their own disaster prevention plans. Efficient disaster prevention measures are considered to function when the government, residents, hospitals, healthcare organizations, companies and NPOs work together to formulate plans.

2. When a disaster occurs/immediately after a disaster: mitigation/response

At the time of and immediately after a disaster, public rescue such as the police, fire fighter, and the Self-Defense Forces may not be able to enter all sites immediately.

During the 1995 Great Hanshin-Awaji Earthquake, rescue from a collapsed house by a neighbor was reported [6]. During the 2004 Indonesian tsunami, it is known that the presence of male family members who helped contributed to improved survival [44].

After a disaster has occurred, residents will be involved in the operation of shelters if they live there for the medium term. If it is a relationship where people usually know each other and cooperate, the operation will proceed more smoothly than in other regions. In addition, evacuation supplies and necessary support are often managed by the government, and the accessibility to such support reflects the richness of linking social capital that allows direct contact with the government [45].

3. Post-disaster: recovery

People from various organizations and departments are involved in disaster recovery, and many residents are also involved for their livelihood such as reconstruction of housing, roads, railway networks etc. Therefore, there are cases where consensus building is difficult. Cooperation at various levels, such as between residents, residents and administration, and administration and the private sector, is thought to affect the speed of reconstruction [42].

IV. Utilization of social capital for disaster recovery and its dark-side

Here are some examples of social capital related to disaster recovery. One is the method of relocation when migrating to prefabricated temporary housing due to the tsunami damage caused by the Great East Japan Earthquake. The second is about people's interactions and social participation in prefabricated temporary housing. Finally, the negative aspects that should be noted when considering how to use social capital are introduced.

1. Group relocation and social support

There are mainly two methods of moving to prefabricated temporary housing after home has been destroyed by a disaster. The first is group relocation whereby people who originally lived in the same district move as a group. The second is a method whereby tenants are randomly selected by lottery for each temporary housing unit (in this case, lottery transfer). As a lesson at the time of the Hanshin-Awaji Earthquake, it was said that it was important for residents to live nearby when they moved into temporary housing to maintain their connections. Therefore, this lesson was used in some areas during the Great East Japan Earthquake. However, there are difficulties with the implementation of group relocation. Basically, people will move into a prefabri-

cated temporary housing area that can accommodate dozens of households. However, if the number of households in the original area exceeds the occupancy, not everyone can move in immediately. Considering the number of households in the original area and the construction status of prefabricated temporary buildings, it is necessary to divide the area into an area into which occupants move first and an area into which occupants move later. The victims basically want to move from shelters to temporary housing as soon as possible. Therefore, it is necessary to make adjustments while waiting. This coordinating work cannot always be done by a government that is busy with a sudden disaster response. In addition, because the government prefers "fairness" like a lottery, the convenience of the community may have to be sacrificed for fairness. The area where group relocation has been implemented seems to be a relatively small community or a limited number of communities. Even if group relocation is basically adopted, if a resident comes from another area or the occupancy time deviates from other people for some reason, the result may be the same situation as lottery relocation.

In a study conducted in a prefabricated temporary housing area in Iwanuma city, these differences in the status of relocation and the connections between people were investigated [46]. The results showed that the proportion of people who received or provided social support was significantly higher among those who moved in as a group than those who moved by lottery: people who received social support were 92% of those who answered that they were moving as a group, while it was 70% of those who moved by lottery, and those who provided social support were 80% of people who moved as a group, and 66.7% of those who moved by lottery. The risk of depression also tended to be higher without social support in the same study [46].

This suggests that when moving into evacuation shelters and temporary housing, it is important to actively adopt group relocation, which can maintain the original community as far as possible as allowed by the situation. This requires a lot of negotiation and coordination. For these to work well, it may be important to have social capital from before the disaster, that is, the relationship and connection between the district head, the government, and the community people, from before the disaster.

2. Effect of social participation and exchange in temporary housing areas

The temporary housing area after the Great East Japan Earthquake played a role as a community. According to the analysis results of the survey data of Miyagi Prefecture in 2012 and 2013, it became clear that there was a difference in people's mental health between the temporary housing

communities [47]. Individuals who lived in temporary housing with many people whom they could consult about their worries, and those who were actively participating in community events had good mental health after one year. After the Great East Japan Earthquake, the government and volunteers encouraged the survivors to go out and participate in society through events in many prefabricated temporary housing areas, and to deepen exchanges. This study shows the possibility of reducing the mental stress of the survivors through such efforts to increase social connections. The study also suggests that if survivors live in a well-linking community, regardless of the individual situation, they are healthy. The situation of the prefabricated housing area may have been improved by the social capital that makes it easy to obtain various kinds of information and support through communication among the survivors.

3. Negative side of social capital

It has been pointed out that social capital also has a negative side: a dark side [48,49]. It is the negative aspect that too strong cohesion may reject outsiders or not be able to stop bad culture and norms. Interviews have shown that women have been told that they should get up at 5:00 am and start cooking at shelters after the Great East Japan Earthquake [43]. The women said that they would not be in the shelter if they had objected. This community connection seems to have worked in the wrong direction for the women. Although gender issues can affect many aspects of society, these issues must be reduced by including female staff as administrative staff working in evacuation shelters and temporary housing, or by including women in disaster-recovery meetings.

V. Summary

Among social determinants of health in disaster-affected areas, this paper focused on social capital. Although social capital is invisible, it may play a major role in disaster mitigation and recovery after a natural disaster. It was suggested that not only strengthening of the physical infrastructure, but also the creation of a community that fosters social capital is necessary to prepare for natural disasters. There is a need for ongoing research, such as how to create social capital during normal times more effectively, and whether social capital had a major impact on survivors' health over the long term.

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被災地におけるソーシャル・キャピタルの役割

佐々木由理¹⁾, 相田潤²⁾, 三浦宏子¹⁾

¹⁾ 国立保健医療科学院国際協力研究部

²⁾ 東北大学大学院歯学研究科国際歯科保健学分野

抄録

近年、自然災害は増加傾向である。建築物、耐震基準や防波堤などのハード面の対策が、災害の被害を減少させるために重要であるが、それだけでは限界がある。そのような中、ソフト面の対策にも注目すべきことが指摘されている。本稿では、健康の社会的決定要因の1つとして注目されているソーシャル・キャピタルに焦点を当て、被災地での影響を概観することを目的とした。災害からの回復の過程である復興期の社会的・物理的環境への適応や健康の回復、地域のインフラとコミュニティの回復スピードは、ソーシャル・キャピタルが豊かな地域ほど早いことが示されてきている。更に、ソーシャル・キャピタルと、そこからもたらされる社会的サポート、組織参加、インフォーマルな社会統制は、災害が起こる前の平時からの個人およびコミュニティの災害への備えと回復力(レジリエンス)を向上させることも示されている。一方、ソーシャル・キャピタルには負の側面もある。負の側面に注意を払いながら、平時からソーシャル・キャピタルの醸成を促す地域づくりが震災の備えに必要である。

キーワード：ソーシャル・キャピタル，健康の社会的決定要因，自然災害