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Original Article

Community social capital on fighting dengue fever in suburban Surabaya, Indonesia: A qualitative study

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ABSTRACT

Purpose: Dengue hemorrhagic fever (DHF) is a communicable disease that is difficult to manage, especially in tropical countries. Social capital is believed to be able to improve the ability of entire communities to work together to solve a collective health problem. This study aimed to describe the existing social capital in a community and how it was used to fight DHF.

Methods: Qualitative descriptive methods were used, and in-depth interviews were conducted with 13 participants. This study was conducted in the Sawahan sub-district, Surabaya, Indonesia, an endemic area that combats DHF every year.

Findings: Results showed that social capital as a community feature provides the main cornerstone of collective action. The creation of social groups, intersectoral collaboration, mutual assistance in cleaning, and voluntary work were visible forms of social capital in the prevention and control of DHF. Support from strong leaders also had significant implications.

Conclusions: This study showed that social capital was an important feature, which, if managed, used and accessed properly, would be able to provide ideas for solving community problems.

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1. Introduction

Dengue fever has become a major public health problem in Southeast Asia and is expected to grow in the future. Although outbreaks occurred in 2013, several studies suggested that the disease was not widely recognized and was underreported, and the budget was insufficient for preventive measures [1].

Surabaya and Jakarta were the two areas to first report an outbreak of dengue fever in 1968. The following year, dengue fever became an epidemic that occurred annually, with outbreaks occurring every five or ten years [2].

According to the East Java Province Health Department, 1817 cases of dengue fever have been reported since January 2015, reflecting an 85.4% increase from the previous year in the same month, which had 973 cases [3]. In 2008, most of the dengue fever cases in Surabaya occurred in Sawahan with 159 cases, followed by

Semampir with 140 cases and Tandes with 134 cases in. The data clearly indicate that dengue fever is endemic in Sawahan.

Community-based dengue fever control programs have been implemented in several countries to prevent the transmission of dengue fever [4–8]. The level of success and effectiveness of those programs depended on the community's capacity to readily accept and apply projects. The programs aimed to raise awareness of how to prevent and reduce the spread of dengue fever vectors on an individual level [9].

In Indonesia and other countries, efforts to control DHF have not been effective and have failed in some degrees. A main reason was the failure to mobilize all the community social capital, a lack of space for community involvement, and unclear guidelines on who should be involved in community-based dengue fever control program activities, thereby affecting their long-term sustainability and effectiveness [10–13].

Social capital is believed to increase collective capacity in solving community health problems [14]. According to Dominguez and Arford [15], social capital is the foundation of community empowerment and community capacity development. The majority of community-based dengue fever prevention and control programs involve community participation, community resource

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mobilization, intersectoral collaboration among various stakeholders, and community capacity building. Social capital serves as an essential tool for areas with health issues and a lack of resources and information.

The concept of social capital, which has been widely addressed, directly relates to the role and function of community health in providing health programs through the influence of social capital on community capacity building and collective action and empowerment [16]. Putnam and other scholars argue that participation is essential in a variety of networks, explaining that social capital could help their collective action [17–19].

According to the initial assessment at Sawahan, dengue fever prevention and control has three levels, namely, the individual, neighborhood, and community/intersectoral levels. These three levels reveal different aspects of the dengue fever management situation.

The above statements indicate that further explanation is needed to understand the existing context that will indicate the various forms of social capital used within the community for dengue fever prevention and control programs.

This study attempts to describe the existence of community social capital with regard to dengue fever prevention and control in the Sawahan sub-district, Surabaya, Indonesia.

2. Methodology

2.1. Design

A qualitative descriptive study was conducted in Sawahan, the sub-district with the highest incidence of dengue fever in Surabaya [20].

2.2. Participants

Sawahan is a sub-district in a suburban geographical area and has the fourth largest area and highest population density in southern Surabaya. Sawahan is located approximately 4 m above sea level. The overall site area is approximately 7.64 km² and is divided into six villages, with a total population of 230,563.

One of the villages in Sawahan used to be the largest prostitution center in Indonesia and was shut down by the government in late 2015. The closure led to a loss of jobs and in some ways the shutdown of a large economic sector of the village.

The participants of this study were 6 official heads of villages, 1 director of the community welfare and safety sub-district office, 4 community nurses who worked at the local public health center, and 2 community health volunteers. Thirteen key participants were responsible for the National Mosquito and Larvae Breeding Eradication Program from the existing population in the area of research coverage. The general information of the participants is shown in Table 1.

2.3. Data collection

Data were collected from January to May 2016 in Sawahan, which has an especially high prevalence of dengue fever. A total of 125 cases of dengue fever were reported in 2015, and 6 cases were reported in the first two months of 2016.

The in-depth interview questions focused on the influence of social capital of the community on dengue hemorrhagic fever (DHF) prevention and control and related experiences. The interviews focused on the participants' existence, role, experience, and connection to the community within DHF prevention and control activities.

The community health workers were interviewed in their

homes, and the sub-district officer and the community nurses were interviewed in their workplace to provide them with comfort and convenience. All interviews were recorded and transcribed for data analysis.

2.4. Data analysis

Interview data were analyzed using Uwe Flick [21]. The practical steps of analyzing and representing interview data were performed. Data analysis began with (1) reducing data to locate and examine phenomena of interest. In this phase, the interviews were transcribed, and then the data were read and reread. The next phase was (2) reorganizing, classifying, and categorizing data, in which the researchers generated assertions about topics by reassembling and reorganizing the data, codes, categories, and stories. The last phase was (3) interpreting and writing up findings. In this phase, the researcher considered assertions and propositions in light of prior research and theory to develop arguments. Researchers developed stories that conveyed the main idea developed in the data analysis and presented data excerpts or stories to support assertions.

The stories were sorted to examine the existence of community social capital on DHF prevention and control. The community social capital data were sorted and grouped based on Putnam's [22] theoretical framework, which consists of three main features: network, norm of reciprocity, and trust.

2.5. Ethical considerations

Ethical approval to conduct this study was granted by the Institutional Review Board Ethical Committee of Khon Kaen University (Thailand), the Regional Department of Health (Surabaya, Indonesia), and the Regional Department of National Unity, Politics, and Public Protection (Surabaya, Indonesia). All participants were provided with a participant information sheet written in Bahasa Indonesia, and they signed the consent form prior to participating in the study.

3. Findings

3.1. Behavioral problem

As an endemic area, Sawahan must deal with preexisting issues such as population density, economic fall, their status as a former area for prostitution, and a high risk of crime in addition to dengue fever. The community demonstrated a low level of concern regarding health; such behavior was one of the reasons combating dengue fever in the region is difficult. Littering, reluctance to clean bathrooms, and a low ownership of clean toilets are among the inappropriate behavior exhibited by the residents.

According to the participant from the sub-district office, "They're used to living like that. Changing one's lifestyle is difficult. Cleaning the bathroom once a week is exhausting. People are even lazier to clean a large bathroom. Encouraging the community itself to change is rather difficult." (P1).

3.2. Social group mobilization

One of the forms of social capital, which plays an important role in the efforts to eradicate dengue fever, is Sanitarian. In the Sawahan sub-district, four Sanitarians worked in the four primary health centers (PHCs). The Sanitarians were responsible for the entire DHF prevention and control program in the region and implemented it in their own PHCs. They have to cooperate with the village offices, the sub-district office, the regional Department of Health, and

Table 1
General information of the participants.

N	Gender	Age	Position	Duration in charge (in years)
P1	Male	47	Director of community welfare and safety sub-district office	20
P2	Female	32	Community nurse	10
P3	Female	35	Head of village	5
P4	Male	40	Community nurse	7
P5	Female	37	Community nurse	11
P6	Female	33	Community nurse	17
P7	Female	35	Head of village	5
P8	Female	37	Head of village	3
P9	Female	40	Head of village	5
P10	Female	47	Community health volunteer	13
P11	Female	31	Heads of village	4
P12	Female	30	Community nurse	15
P13	Female	43	Community health volunteer	12

larvae observer groups, such as Bumantik (women larvae observers), Jumantik (family larvae observers), Rumantik (teacher larvae observers), and Wamantik (student larvae observers) in each region. Together with the community health workers, they work at the individual level. Each week, they visit a resident's house to check for mosquitoes and larvae, provide health education to residents if the household includes one person with dengue fever, conduct epidemiological investigation on 20 houses near the house of the person with dengue fever, distribute larvicides, and conduct fogging within 100 m from the house of the person with dengue fever.

One of the community nurses said, *"It's better for me to go down (to the village) for prevention and education rather than for fogging activities. If there are dengue fever cases, we feel sorry for the family because their lives are disrupted, and there is also the risk of dengue fever spreading to the neighbors. PSJN (mosquito and larvae breeding eradication) is a more convenient approach. Thus, we mobilize Bumantik at the grassroots level."* (P 11).

3.3. Community voluntary cleaning

In 2015, 125 cases of dengue fever were reported in Sawahan, accounting for 20% of the incidence throughout Surabaya. Thus, various sectors are determined to undertake joint efforts in dengue fever prevention and control. One main effort is community volunteer work, which involves various elements of society and includes clean-up activities, reforestation, cleaning of drains and wells, and painting.

A participant from the village office said, *"Public voluntary work is done at least once a month, along with PSJN. Bumantik and lay citizens also monitor larvae."* (P 3).

3.4. Leader support

The role of the leader in establishing and maintaining cooperation across sectors is important, especially to set an example for the entire community. People often look to their leaders as role models. In addition, leaders are expected to facilitate cooperation, which will encourage people to participate in intersectoral collaboration activities.

As said by one of the community nurses, *"... Before Tri Rismaharini (mayor of Surabaya), it seemed like we were working on our own. Cross-sector collaboration was ensured by Risma. The villages and the ensure sub-district used to be unconcerned about fighting dengue fever. Since Risma became mayor, village leaders were asked to focus on dengue fever, because it was a health concern not only for the Department of Health. Risma said this was your region; if people are sick, you have to help mobilize society."* (P 12).

3.5. "A small bomb"

In 2014, the Surabaya government implemented a policy to give 25,000 Rupiah or the equivalent of USD 2 per month to the Bumantik as pocket money. This policy achieved a positive effect; the incidence of dengue fever decreased significantly from the previous year. An overall five-year decrease in dengue fever cases has occurred. The number of cases was first recorded in 2010; a total of 3379 cases were recorded. In 2011, this number fell to 1008 cases before rising slightly in 2012 to 1091 cases. A large increase occurred in 2013, with 2207 cases. After the policy came into effect in 2014, the cases of dengue fever fell to 816 cases and then to 600 cases in 2015.

"Because they received it (pocket money), changes occurred. Dengue fever cases were fewer than in previous years. It was like a small bomb, and we should have more of such bombs again. This little bomb could eradicate quite a lot of mosquitoes. The work of the Bumantik ensured such results, but these results are not the best" (P 10).

4. Discussion

The shutdown of the prostitution center and the subsequent economic collapse, a high crime rate, economic inequality, and poverty were all incentives for the Bumantik, Wamantik, and Rumantik programs. Intersectoral collaboration and the city mayor gradually made the public aware of health issues and the risks of DHF in Sawahan, Surabaya, a community that was trying to rise above its difficulties to achieve improvement and development.

Bourdieu [23] argues that the system of connections was the result of individual or aggregate speculation techniques, which intentionally or unknowingly contributed to social connections that were usable in the short or long term.

At this stage, researchers believe that all connections, relationships, activities, programs, and plans that were made by, from, and for the community created a picture of a community that will likely attempt to govern themselves in a positive way.

Sub-districts and other parts of the government office, through ongoing collaboration with various stakeholders, show that maintaining relationships with communities is the key to community development.

The following components of community-based organization, which involves participating in every effort, show that the norms of helping each other, cooperation, solidarity, and mutual trust exist in the community. All these resources are the wheels, oil, and glue that will continually be used for the benefit and good of the community, especially in the prevention and control of DHF and other collective problems.

In their recent research on Bantul, Yogyakarta, Indonesia, Subaris et al. [24] showed that social capital was able to increase the larval index through family participation in voluntary work. Mukarromah et al. [25] conducted a study in Sidoarjo, Indonesia, and found that the forms of social capital such as cooperation, trust, and norm significantly affect community sustainable awareness efforts in dengue fever management.

Managing all resources, components, forms, and a whole series of social capital in the community is not easy because of the difficulties in encouraging people to switch to healthy lifestyles, to dispose of and manage waste properly, and to participate in the eradication of larvae breeding places and mosquitoes. However, through a gradual increase in social capital through introductions and continuous efforts, visible results were eventually obtained. The involvement of local leaders in encouraging residents had a multiplier effect on every component of society. People steadily became accustomed to using the existing social capital in the form of a network, norm, and trust that change will occur.

Field [26] argue that “trust and trustworthiness have been often compared to a lubricant, oiling the wheels of a variety of social transactions.” This is highly significant to the idea of social capital, which underscores the mechanism in which community systems provide access to resources easily.

The strategies of regional leaders across sectors, such as health departments, community health centers, the military, and the police, to keep working hand in hand with the community demonstrate how social capital can work to have a positive influence or impact. As Putnam [27] describes, elements of social association, such as trust, norm, and network, can enhance the proficiency of a society by encouraging structured activities.

5. Conclusion

Social capital is a feature embedded in the community. Social capital in the form of norms, trust, and network is demonstrated through a variety of community activities such as community gatherings, the establishment of larvae observer groups, voluntary work, efforts to change behavior, and intersectoral collaboration.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ijnss.2017.10.003>.

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