# Social Capital and Dengue Fever Management In Buang Ngern Subdistrict, Thailand : A Case Study

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**ABSTRACT**

***Objective*** *to describe the existence of social capital in managing dengue fever in buang ngern subdistrict, Thailand.*
***Method*** *this study use case study based on the thepry pof social capital as the foundation of the data analysis*
***Result*** *In the case study on Buang Ngern shows that the community which have high level of social capital could be able to reduce the incidence of dengue fever significantly by cooperating with various sectors, such as; Household Members, Housewife Group, Village Health Volunteers, Local Administrative Organization, Village Committee Health, Health Volunteers And Health Workers In Health Centers. Cooperation which involving several community groups will be difficult to occur in the absence of a high level of trust between groups, social norms and networks among community members.*
***Conclusion*** *Social capital as one of the features that exist in the community is having advantage if could be used appropriately. In the community based dengue fever prevention and control program which require inter-sectoral cooperation, social capital can become a bridge between groups in giving contribution based on the role and function of each group.*

**BACKGROUND**

Communities are organized and influenced by larger units, such as municipalities, districts, counties and local administrative units, but a health system ultimately intersects in people's lives in their local community spaces. Social support, social capital, empowerment to make decisions and trust between individuals within a community are important determinants of health service usage and outcome, even within the larger categories. These dynamics and relationships within communities and between communities and their environment influence health status most directly. Powerful external forces, including globalization, the economy and politics, are the context within which the community functions.

Community contexts are mini universes of complex social, political, associational, economic, power and cultural dynamics, providing a different theater for providing health services and facilitating behavior change than in a health facility. Some communities may consist of relatively homogenous populations (whether it be the same tribe, cultural group or religious affiliation), while other communities may be quite heterogeneous. Some communities may be stable, while others have high levels of migration in certain seasons. Communities also differ a great deal in the degree of social cohesion; often they are made up of various ethnic or caste groups or clans, whose identity is not at the level of a geographically or spatially defined community. Communities will mirror the value systems specific to the region, nation-state, religion or other cultural attribute. While western values focus on individual behavior change and individual actualization, many African and Asian systems focus on group procedures and relationship programs to enhance one-on-one relationships of trust.

Communities present different challenges than standardized health service delivery systems and large-scale public health approaches, as dynamic, evolving entities. Demographics and epidemiology will inevitably change over time. High-impact health prevention and promotion activities—such as promotion of exclusive breastfeeding, infant and young child feeding, birth delivery planning, use of an insecticide-treated nets (ITNs) for dengue and malaria prevention and essential newborn care—are of particularly high importance in community settings. In such situations, effective behavior change approaches are essential when compared to facility settings where more complex medical procedures are promoted for maximum impact.

The community, as a local system, shares underlying characteristics common to all systems. Their architecture is

dynamic and builds on opportunities and interactions both within the community and between the community and outside forces, such as the health system. Every intervention, from the simplest to the most complex, will have an effect on the overall community system. 3 What seems like an obvious solution to a problem may sometimes worsen the problem or have unanticipated effects because the problem is part of a wider, dynamic system.

At an organizational level, a high-functioning community underpins and supports an effective health system. This foundation includes networks of supportive relationships, community associations to support the impoverished, health service choices that are effective and equitable, and community institutions that monitor health outcomes and quality of services. A strong community also enables the government health system to best invest its limited health resources by tapping into local human resources and assets. After all, caregivers, families and communities are ultimately the key producers of good health outcomes.

**COMMUNITY AND SOCIAL CAPITAL**

Social capital, defined by Robert Putnam as the "connections among individuals in social networks and norms of reciprocity and trustworthiness that arise from them," has shown a positive association with health and other community outcomes. Social capital is the degree and quality of social networks, norms of reciprocity, mutual assistance and trustworthiness that bonds similar individuals within a community together or bridges diverse people together. Putnam demonstrated that the level of social capital distinguished more successful from less successful towns as measured by widespread relatedness that existed among citizens. Support from individuals and cognitive social capital (i.e., trust, social harmony) has been found to be associated with child nutritional status across four countries.

Community social capital has been linked to a variety of community health status variables through different mechanisms such as reducing or buffering stress, coaching and urging of healthful practices, providing information to expand one's knowledge base about health and increasing responsibility for the well-being of others. Community organization and social capital have also produced positive effects in helping families escape poverty by supporting households to cope better with illnesses and negative events, and enabling investments in land-based activities (such as livestock production or natural resource management) that provide a source of rural income.

Social capital facilitates cooperation and lowers the cost of

working together, primarily through four mechanisms: 1) Trust between people reduces their transaction costs since they have social obligations and act as expected. Trust and cooperation take time to build, especially when a community is permeated by distrust, and it's easily fractured; 2) Correspondence and a proceeding relationship of trade that in the long run is reimbursed contribute to the improvement of long-term commitments between individuals; 3) Common rules, standards and sanctions that are commonly concurred upon offer assistance put gather interface over person interface, and empower people to require activities to guarantee their rights are met; and 4) Vertical and flat connectedness between and among systems and bunches offer assistance bridge diverse focuses of see, and increment the community's capacity to lock in with outside offices or impact arrangements. The more linkages there are the way better.

## CASE STUDY

### An Overview of Buang Ngern sub-district

Bua-ngern Village is an ancient sub-district. It used to be wide region which covered Ban-pharng sub-district, Huana-kum sub-district, Nong-no sub-district of Kra-nuan district and Pung-tui sub-district of Namphong district, Khon Kaen province. The first village headman was Mr. Sorn Montri (the ancestor of Pinitmontri Family). After that, he was honored as "Khun Bua-ngern-ngarm-rart" regarding on the name of Bua-ngern Village (now it is known as Nong Bua-ngern Village, Pung-tui sub-district, Namphong district). In the past, the oldest village of the sub-district was Ban-pharng (Ban-pharng, Kra-nuan district). It was considered as the first village. However, the village was separated from Bua-ngern district. Although Bua-ngern sub-district separated, it was still very large which was difficult to rule. As a result, Mr. Orn-sa Phojantha, the village headman, separated the village to be Pung-tui sub-district. At the present, Bua-ngern sub-district occupies 17 villages.

There are 2 Community Health Center which are Barn Pia-pharn Health Cennter (8 health personnel) and Barn Khok-yai Health Center (6 health personnel). Barn Pia-pharn health center is responsible for 13 villages while Barn Khok-yai health center is responsible for 4 villages. Therefore, Barn Pia-pharn health station is one of the government health care service stations in Bua-ngern sub-district.

## RESULT

Below is a simple survey to determine the existence of social capital in a some villagers and also the incidence of dengue fever in each village. Social capital survey was

measured using adapted social capital assessment tools (ASCAT) which previously used by Yu Sato eat al (2014) in his research in laos. The ASCAT was proposed by Harpham et al and has been develop its construct validity from a research
in Vietnam and Peru. This tool is chosen because the appropriateness in covering the social capital domain which include; group membership, group support, individual support, citizenship activities and cognitive social capital.

Table 1. Dengue Case in Phia Fan Community Health Center Catchment Area

| No | Question | Mean | Max | Min |
|---|---|---|---|---|
| 1 | In the last 12 months, have you been an active member of any of the following type of groups in your village? | 4.65 | 8 | 2 |
| 2 | In the last 12 months, did you receive from the group any emotional help, economic help or assistance in helping you know or do things? | 3.60 | 8 | 1 |
| 3 | In the last 12 months, did you receive any support or help from any one of the following, this can be emotional help, economic help or assistance in helping you know or do things? | 3.65 | 8 | 1 |
| 4 | In the last 12 months, have you joined together with other villager members to address a problem or common issues ? | Yes | | |
| 5 | In the last 12 months, have you joined together with other villager members to address a problem or common issues ? | Yes | | |
| 6 | In the last 12 months, have you joined together with other villager members to address a problem or common issues ? | Yes | | |
| 7 | In the last 12 months, have you joined together with other villager members to address a problem or common issues ? | Yes | | |
| 8 | In the last 12 months, have you joined together with other villager members to address a problem or common issues ? | Yes | | |
| 9 | In the last 12 months, have you joined together with other villager members to address a problem or common issues ? | No | | |

The table 1 shows the fluctuations in the incidence of dengue fever in the the fan phia community health center catchment area for recent two years. Despite the increasing number of dengue incidence from 2012 to 2013, furthermore in 2014 did not find any case. In the two years before, in the year 2010 and 2011 respectively also showed fluctuations with the incidence of 42 cases and 2 cases. The above data also shows the incidence of dengue fever in each village and and Na fai nuae village showed the highest incidence of dengue fever with 22 cases in 2013.

Table 2. Exixtence of Social Capital

| No | Village | Village Number | Year 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| 1 | Phia fan I | 1 | | 3 | |
| 2 | Na fai nuae | 2 | 1 | 22 | |
| 3 | Non daeng | 3 | 7 | 1 | |
| 4 | Nong waeng | 4 | | 1 | |
| 5 | Nong kung khi kwang | 5 | 2 | 6 | |
| 6 | Kham jan I | 6 | | 1 | |
| 7 | Nong waeng dong | 7 | 1 | 6 | |
| 8 | Non sawan | 10 | | 3 | |
| 9 | Khok lao | 12 | 3 | 3 | |
| 10 | Phia fan II | 14 | | 1 | |
| 11 | Kham jan II | 15 | | | |
| 12 | Kham jan III | 16 | | | |
| 13 | Nong wang II | 17 | | | |
| | Total | | 14 | 51 | |
| Incidence Rate | | | 0.18 | 0.61 | 0 |
| Case Fatality Rate | | | 0 | 0 | 0 |

The tabel 2 shows an overview of social capital on Buang Ngoen community member which shows that at the average they have 5 groups that they follow it in the past year. The same evident is seen also from the number of groups that provide assistance or support in the form of economic and emotional.

Table 3. Group membership

| No | Group | N | % |
|---|---|---|---|
| 1 | Mass organization | 8 | 11.11 |
| 2 | Farmer/agriculture/livestock association | 13 | 18.06 |
| 3 | Political group | 8 | 11.11 |
| 4 | Religious group | 11 | 15.28 |
| 5 | Credit/funeral group | 14 | 19.44 |
| 6 | Sport group | 7 | 9.72 |
| 7 | Art and cultural group | 9 | 12.50 |
| 8 | Other | 2 | 2.78 |

The data in the table 3 indicate that the credit/funeral association is the group that most often provide support to the community members with a number of 19.44% followed by farmer / agriculture / livestock with the number 18.06%. Beside that the average of other groups also provide the same support to its members.

The table 4. shows from several groups in the community, three groups: religious group, credit / funeral group and farmer / agriculture / livestock association is the most widely followed group by the community member. In addition, villagers also belong and as active members of other groups such as health volunteers, village committee and also housewife group.

From the table 5 it is known that neighbor, village leader, family is an individual who used to give support and assistance with successive

18.67%; 18.67% and 17.33%. otherwise there are also the other individuals who have contributed in providing support and assistance to community members who are in need of assistance.

Table 4. Support from group

| No | Group | N | % |
|---|---|---|---|
| 1 | Mass organization | 11 | 11.96 |
| 2 | Farmer/agriculture/livestock association | 15 | 16.30 |
| 3 | Political group | 5 | 5.43 |
| 4 | Religious group | 17 | 18.48 |
| 5 | Credit/funeral group | 16 | 17.39 |
| 6 | Sport group | 9 | 9.78 |
| 7 | Art and cultural group | 8 | 8.70 |
| 8 | Other | 11 | 11.96 |

The above data also shows an overview of the individual support, social activities and also cognitive social capital. It could be said that the majority of the villagers are active in community activities in the last past the year, and the villagers also have a high level of trust and a sense of community.

## DISCUSSION

### The existence of social capital and the dengue fever incidence

The results of this case study suggests that there are fluctuations in the incidence of dengue fever in the Buang Ngern community health centers catchment area in a period of four years. Fortunately, in 2014 there is absolutely no incidence of dengue fever. The objective of this case study actually want to see is there any existence of social capital on Buang Ngern population and how this social capital affects on health indicators including the incidence of dengue fever. Many studies had been shows that community with high level of social capital will be quite easy to make and design a problem solving or case settlement. And also it was believed that social capital has an influence on the health of a community.

Table 5. Support from individual

| No | Supporter | N | % |
|---|---|---|---|
| 1 | Family | 13 | 17.33 |
| 2 | Neighbor | 14 | 18.67 |
| 3 | Friend who are not neighbor | 9 | 12.00 |
| 4 | Village leader | 14 | 18.67 |
| 5 | Religious leader | 9 | 12.00 |
| 6 | Politicians | 5 | 6.67 |
| 7 | Government officials/civil servants/ | 5 | 6.67 |
| 8 | Charitable organization/NGO | 5 | 6.67 |
| 9 | Others | 1 | 1.33 |

Research conducted by Rizanda Machmud (2014) in Indonesia shows that the utilization of social capital will have an impact in declining the incidence of dengue fever significantly. Even in the fourth year after the study the incidence of dengue fever drops to zero case. Rizanda Machmud use some aspects of social capital, ie, networks, trust and norm of reciprocity to mobilize the society and follow the active participation in the form dengue fever

control and prevention. Similar results were shown by research conducted by Susilowati Tana et al (2012) in Yogyakarta. In this study indicate that the village which has a high social capital are able to design activities that they adjust to local conditions for controlling dengue, that study also concludes that the community-based program that is a bit difficult in the beginning but giving wider effect and its sustainability in the future.

Several studies in Cuba and Thailand also showed similar results. One study conducted by Charuai Suwanbamrung (2011) in the southern of Thailand indicating the community which has a good network of communication and will have good results of community capacity building and will affect to the appropriate pattern of dengue fever prevention and control models. Similar results were shown by Castro (2012); Sanchez (2009); Toledo (2007), which conducts their research in Cuba, some results of this study indicate that inter-sectoral cooperation can reduce the number of dengue fever cases in Cuba population, significantly. This cooperation is nothing but a form of social capital in which there is a foundation of trust and networks. This study also shows that to combat the complex diseases such as dengue fever required the general agreement or understanding and similar vision in covering several sectors of civil society, community leaders, health workers, volunteers and government.

The results of a similar study also found in a study conducted by Malin Eriksson (2009) in a countryside in Sweden. The results of this study indicate that although in the countryside experiencing some social problems such as a reduced number of population due to urbanization, and also pooling the region with the surrounding area but due to their high level of social capital succeed in finding solutions to problems. They also successfully built rural health centers independently due to mutual cooperation among the population. This shows that social capital is able to create a community to continue living.

Those case is in line with Bourdieu (1992) clarification that The presence of a organize of associations isn't a normal given, or indeed a social given, constituted once and for all by an starting act of institution, spoken to, within the case of the family gather, by the genealogical definition of connection relations, which is the characteristic of a social arrangement. It is the item of an perpetual exertion at institution, of which institution customs – frequently wrongly portrayed as customs of section – stamp the basic minutes and which is vital in arrange to create and duplicate enduring, valuable connections that can secure fabric or typical benefits. The impact of low social capital in the community shown by Sokrin Khun

(2008) research in Cambodia. The research nclusion indicate that divided or fragmented societies will be difficult in gaining success in the prevention and control of dengue fever eradication program. The low level of social engagement as the effect of social fragmentation will result in the low level of community participation in any dengue prevention activities. In addition, the level of Social cohesion and sense of community will also be tenuous among community members. This rift in the case of Cambodia on the possibility is caused by political factors Khmer Rouge during 1960s.

## CONCLUSION

Social capital as one of the features that exist in the community is having advantage if could be used appropriately. In the community based dengue fever prevention and control program which require inter-sectoral cooperation, social capital can become a bridge between groups in giving contribution based on the role and function of each group. In the case study on Buang Ngern shows that the community which have high level of social capital could be able to reduce the incidence of dengue fever significantly by cooperating with various sectors, such as; Household Members, Housewife Group, Village Health Volunteers, Local Administrative Organization, Village Committee Health, Health Volunteers And Health Workers In Health Centers. Cooperation which involving several community groups will be difficult to occur in the absence of a high level of trust between groups, social norms and networks among community members.

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