POVERTY AND MALARIA : A STUDY IN A THAI-MYANMAR BORDER AREA

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Abstract. An eight-month qualitative study was conducted in 1999 in four villages of Bong Tee subdistrict, Kanchanaburi Province located along the Thai-Myanmar border area using in-depth interviews of key informants and malaria survey as research methodologies. Malaria was a serious problem in 39.6% of the families surveyed in June 1999. The four villages located in a valley covered with forests and small streams which were ideal for malaria epidemic. The structure of the villages has been changed from stable communities to disrupted ones divided along ethnic and class lines. There were 5 ethnic groups dominated by ethnic Karen. Villagers were poor and thus deprived of anti-malaria resources which allow them to remain exposed to malaria.

INTRODUCTION

An outbreak of malaria in Thailand during 1998-1999 indicates that the malaria problem still exists. The epidemic was mainly located along Thailand's borders. It threatens other malaria-free areas because of frequent transportation between border areas and towns. Although the malaria rate in the following year began to decline, sources of the problem are still there and ready to start an epidemic again. Therefore, it is necessary to discover the sources of the problem.

To answer the question what is the cause of malaria, the medical model points to malaria parasites, such as *Plasmodium falciparum* and *P. vivax*. The public health approach indicates that the mosquito is the only carrier of the parasite to the human host. The public health approach is also concerned about the environment where mosquitos and human hosts live. Capra (1982) argued that fragmentalist and reductionist points of view such as the medical and public health approaches lead to crises, including health crises. Therefore, he proposed holistic medicine to solve the crises. Although the new paradigm is right, his holistic medicine still has limitations. It limits itself to the health institution by adding alternative medicines to modern medicine. It is inadequate because they say nothing about factors outside the health institution. This paper argues that poverty and war due to other social institutions deprive people of resources that protect them from malaria as well as force people to become exposed to malaria risk.

Social disruption is associated with social change such as changing from a mechanic society to an organic society. For example, industrialization in England led to many kinds of social problems, including migration from rural to urban areas, social unrest, increasing slum areas, malnutrition and tuberculosis epidemics (Engels, 1845). A mechanic society is a society that holds people together because of their similarities (Durkheim, 1964). Everybody bonds together because they are doing the same things. They all grow rice, weave cloth and believe in the same religions, for example. Then society is in equilibrium. Organic society is possible because people are different. When a mechanic society changes to an organic society, people begin to differentiate from each other. Some people grow rice only and grow it on a large scale in order to sell to those who do not have rice, while some people weave cotton only in order to sell it to those who do not have cloth. In other words, increasing division of labor leads to interdependence among people. Also, increasing specialization changes ways of life, health behavior and health status. According to Toffler,

there are three waves of social change - agricultural revolution, industrial revolution, and information and technology revolution. The source of change is technology, such as discovering the plow, steam engine and the internet. Each change is associated with frustration, pain and disappointment. On the bright side, it is also associated with new civilization. He encourages people not to resist the changes, but to understand and get involved with them.

The speed of social change is also important, because changes bring good and bad things for people and it takes time for humans to understand and adapt to the changes. Therefore, the faster the speed of change, the more serious the social disruption. The change to an agricultural society and then to an industrialized society in Europe and the United States took time and people slowly adapted to the changes so they suffered less from them. However, developing countries import agricultural and industrialized innovations from the developed countries, so the speed of social change is accelerated. All three waves are present at the same time in many communities. Therefore, society is more disrupted and also health is more devastated.

Moreover, unexpected and radical change, especially due to war, is also very important. War usually destroys the social structure, such that members of families die or are separated, or move away. Normal production becomes disrupted or changed to produce war equipment rather than food and scarcity begins to mount up. Political systems may be destroyed or overthrown. Refugees may burden other societies. Health status will deteriorate.

Malaria will also increase because land and forest that used to be abundant and communal becomes scarce and private. The means of subsistence are limited. Information, technology and transportation allow rich people from other developed areas to come in and control all of the means of subsistence. Native people who still stick to the traditional norms find that they are deprived from their means of subsistence. Refugees who carry the malaria parasite with them become second class people. To sustain their lives, they are forced to earn and to live their lives in ways that expose them to malaria risk factors.

MATERIALS AND METHODS

An eight-month qualitative study was conducted in Bong Tee subdistrict, Kanchanaburi Province located along Thailand's border with Myanmar (Fig 1). The research methodology includes in-depth interviews with key informants including community leaders, health workers and thirty malaria patients, as well as five focus group interviews with three ethnic groups - Karen-Thai, Karen refugees, and other refugees. In addition, data about malaria statistics and malaria patients from malaria clinic were employed. A community survey about malaria was also done in July 1999.

RESULTS AND DISCUSSION

Malaria problem

The malaria problem in Bong Tee subdistrict is still high, though it is past its peak. According to the two surveys of malaria prevalence in this area conducted by the Faculty of Tropical Medicine, Mahidol University in July 1999, which was the peak period, and February 2000, which was the low period, a prevalence rate of 11.1% was found in July 1999 and 3.9% was found in February 2000 (Wilairatana *et al*, personal communication). However, according to our survey in June 1999, 32.5% of the families were free from malaria, 27.9% of the families had a mild malaria problem and 39.6% of the families had a serious malaria problem. Also, according to the malaria statistics of this sub-district, the malaria rate of Thais is 204.7 per 1,000 people and the malaria rate of non-Thais is 568 per 1,000 people.

The social context of disrupted communities

Geographically, this subdistrict is composed of four villages. Within each village, there are small groups of houses ranging from five to fifteen houses scattered around the core

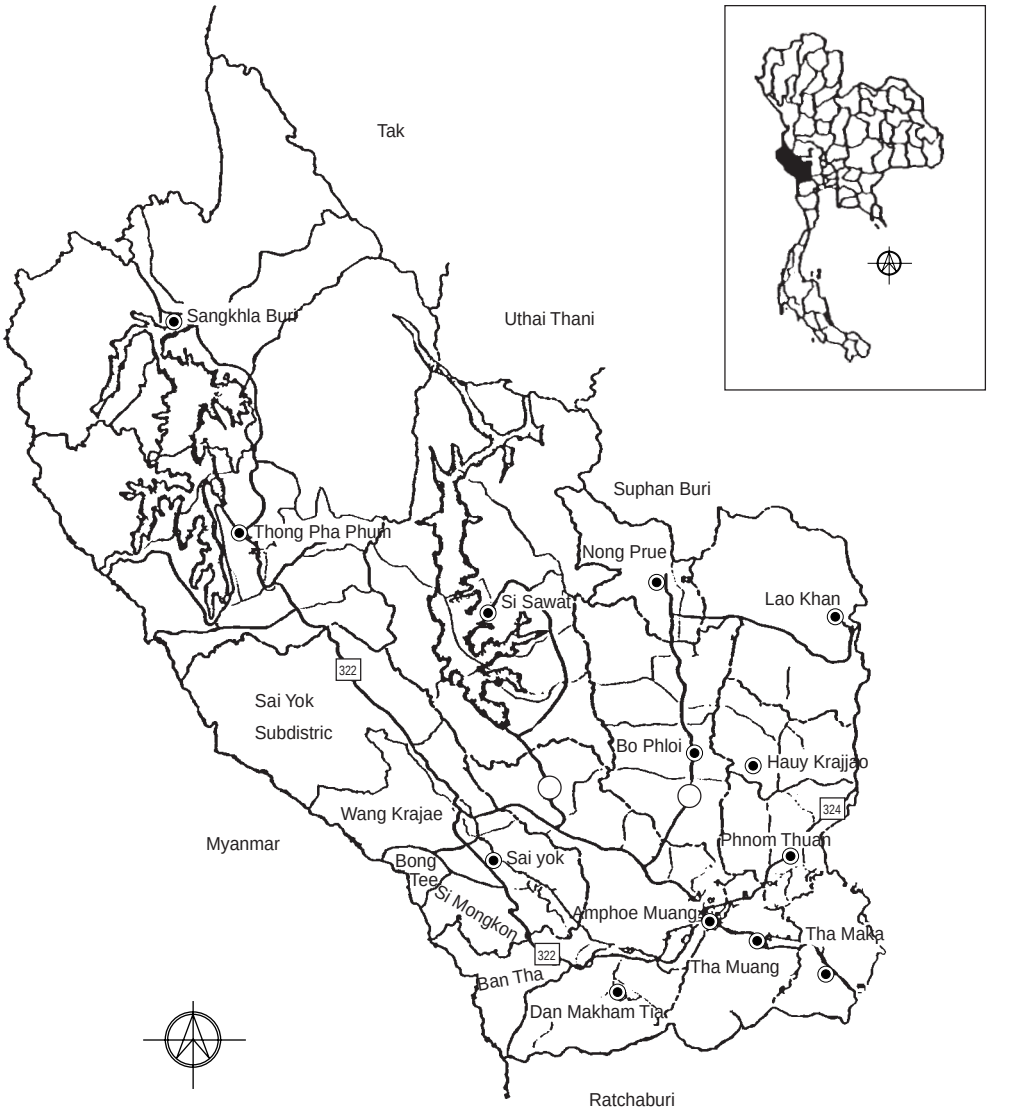

Fig 1–Map of Kanchanaburi Province.

villages. The sub-district is settled in a valley. On the west is a high mountain that is the border of Thailand and Myanmar and on the east is a smaller mountain range that divides this valley from the district center, which is located in another large valley. This valley does not have much flat land and most of the areas are hilly.

Ecologically, these four communities are ideal for mosquitos. They are located in a valley covered with forests and small streams. Most of the housing settlement has been done at the bottom of the valleys where mosquitos live, while most of the major establishments such as temples, schools, government service agencies were built on the top of the hills, where mosquitos have difficulty flying against the wind. The people make their living in ways related to the forest and by growing traditional corps in the forest, which exposes them to mosquitos. As a result, the malaria epidemic here is local in nature. However,

social changes and migration both in and out make the epidemic spread more widely.

Three of the four villages are dominated by Karen and one of them consists of migrants from northeastern Thailand. This valley used to be isolated from the nearby town center or district center which is 28 km away. Historically, there were few people living in this area and most of them were Karen. This situation existed until tin mining began and the lumber industry came in. A narrow foot-path was changed into a road that allowed trucks to carry tin and teak to town. The dirt road could be used only in the dry season. More people, especially those from Myanmar, moved in to become laborers in the mining and teak companies. They used to work in the mining and lumber industries in this area, and in Myanmar, before they came here.

When the tin and the teak were gone, the workers and the companies moved out. However, some of them, mostly Karen, preferred to settle in the area with the local people. Most of them lived in an area near villages number one and number two. Since they have lived here for many years, most of them have received Thai citizenship or have Thai identification cards. They call themselves Thai, although culturally they are Karen. Their population was low and land was plentiful. The border was not a barrier for them to work, and visit their relatives, in Myanmar. In other words, they were part of traditional Karen culture or communal relationship. Their community was quite stable in this period.

In terms of politics, the Thai government organized these border villages into subdistricts and villages, appointed subdistrict leaders, village leaders, and other committees, extending services such as health services including malaria clinics and education into this area to maintain the country's stability. The modernizing process of the Thai government allowed the Karen people to understand and adapt to Thai culture. Many of them began to send their children to higher studies in the Thai education system in towns and some of them became the current leaders of the communities. The leaders learned about Thai politics, Thai laws and the Thai capitalist system, and therefore became the dominant group. Most of the land and government leader positions belong to this group. This group also controls most of the economic activities, including transportation and trading. In other words, the modernizing process began to deprive basic subsistence, such as land, from the majority of the Karen people and gave it to an elite group.

These communities began to become disrupted because of two phenomena that happened almost at the same time: the prosperity of the Thai economic system and the failure of the Karen Nation United to defend their land. Economic prosperity made the Thai government change its policies towards neighboring countries. The government aimed to change opponents into economic partners. In the west or Myanmar there are many resources to utilize in the economic system, such as teak, sea fish, gas and gems. Also, the export of Thai commodities to Myanmar is expected to be high. These activities could be more easily done if there were more communication channels with Myanmar. Therefore, the government and the business groups aimed at bridging the Gulf of Thailand and the Andaman Sea with a road through one of two passes in this valley. Finally, an asphalt surfaced road was built to this valley and was awaiting extension to a seaport in Myanmar.

This road brought in many Thais who were looking for new pieces of land and they mostly located in one place, village number four. A majority of the newcomers are Thai people from the northeastern part of Thailand and Thai people from Kanchanaburi and nearby provinces. They are transforming mountainous and forest areas that used to be communal in Karen culture, or national forest in Thai law, into their private farmlands. Therefore, not only the Karen elite, but also Thai newcomers have deprived the majority Karen of their land and major means of subsistence.

The second phenomenon, the long war between the Karen and Burmese ended in the

triumph of the Myanmar military. They took over all the Karen areas. The defeated Karen had to move out and migrate to live in Thailand and also to this valley. Since they are similar to the Karen born in Thailand, it is easier for them to integrate with the Karen born in communities in Thailand. Some of them try to establish farmlands in order to survive. Many of them earn their living by selling their labor, growing rice and vegetables, and hunting and gathering for food in the forest. Most of them have lived in villages Nos. 1, 2 amd 3 In Table 1, they are categorized as Karen, while the Karen born in Thailand are categorized as Thai. The presence of these Karen groups in the communities caused them to have many problems, including political problems, shortage of land, population problems and health problems. The war not only deprived the Thai Karen of the land that they used to travel to, but also brought a majority of the Myanmar Karen who were deprived of their lands to this small valley.

Not only the Karen, but also other minority groups from Myanmar, such as Tawai, Indian-Myanmar and Mon also came in. While Karen from Myanmar were able to integrate into the Thai-Karen communities, arrangements were made for the other minority groups from Myanmar to live in a camp for misplaced people where occupation and migration are restricted. They left their country because of poverty, escaping from forced labor by the Myanmar army, and also being forced by the Myanmar army to re-allocate their places. They are not directly in a state of war with Myanmar as the Karen group is. However, they look for better economic opportunities and wait for a democratic climate. Moreover, they have no means of subsistence and have been subjected to many restrictions. Therefore, they have secretly left the camp for displaced people to work in towns such as Kanchanaburi, or even Bangkok. In Table 1, they are categorized as Burmese, Indians, and Tawai. They live mostly in village number 3 in their camp for displaced people. Since these groups are not Karen, they were discriminated against by the Karen. Many of them refuse to join community activities with the Karen group.

The Burmese and the Indian groups are able to escape from their camp to work in town, but the Tawai, Mon and other small groups cannot. The latter have no skills, their language ability is low, and their culture is agricultural or a simple life, so they prefer not to stay in town. This group of people includes those who suffer most. They slip away from the camps to work and to live in the forest. After the deadline for sending migrants back to Myanmar, this group will suffer most because they are afraid of being caught and sent back.

Therefore, the structure of the communities has changed from stable communities to disrupted communities which are divided along ethnic and class lines. Those who are not Thai or Karen-Thai are usually working class or lower class and are poor.

Malaria and its social context

Poverty deprives these people of anti-malaria resources and allows them to remain exposed to malaria. On the one hand, they are deprived of malaria knowledge, bed-nets,

Table 1
Percentage of ethnic groups classified by village.

Village	Ethnic groups						Total	Number
	Thai	Mon	Karen	Myanmar	Indian	Tawai		
No.1	41.8	2.6	35.1	16.4	0.9	3.3	100.0	579
No.2	52.5	0.8	40.5	6.2	0.0	0.0	100.0	598
No.3	28.0	0.0	22.3	38.6	11.0	0.0	100.0	471
No.4	93.9	3.9	0.0	2.3	0.0	0.0	100.0	440

access to health care and food. On the other hand, poverty forces them to be exposed to malaria.

In terms of knowledge and practice about malaria, these people lack knowledge. Although they are able to mention the names of the parasites such as "pf" and "vivax", they know only the names of the parasites and are unable to explain what they are and their developmental process in the human body. Their knowledge is related to curative measures more than preventive ones. Many of them are unable to tell the specific signs and symptoms of malaria in each period of the illness. They still believe that bitter things from parts of some specific trees can cure malaria and also many men believe that alcohol prevents them from getting malaria. In addition, they know very little about *Anopheles* mosquito characteristics and their behavior. They know very little about the mosquito and its relationship with the parasite and human host. Therefore, they know less about preventive behaviors or measures.

Poverty prevents them from having sufficient numbers of bed-nets. There are no bed-nets for sale in the villages. There are traveling venders who come in to sell bed-nets, but the price is expensive. One net for three persons costs about three hundred Bahts. One can ask people who go to town to buy nets at a lower price, but the price is still too expensive for the poor. Sometimes malaria workers give bed-nets to the people at no cost. The free nets are only for those who have Thai identification cards or those whose houses are registered. Most of the people here have nothing.

Poverty prevents them from getting service from many governmental services, including access to health services. Those who are not Thai or do not have Thai identification cards are unable to access health and social services or welfare. Although the services from the malaria clinics are free for all, a donation box is sometimes in front of the clinic. Malaria blood-tests from the health centers are also free. People have to pay for antimalarial drugs if they do not have a health insurance card. Health insurance cards are available for those who have no identification cards, but they are very expensive. Service from community hospitals is also available, but those who have no card know that the services are usually only available for severe cases. The costs of hospital medical care for malaria for severe cases are usually high. They cannot pay for it but the doctors usually ask them to pay as much as they can and the rest they can pay whenever they have money. However, the nurses frequently ask them why they come to the hospital when they have no money.

In terms of housing, having electricity, having good and clean housing and electric lamps to prevent mosquitos, almost all of the people in the displaced people camp, and the Karen from Myanmar, live in bamboo houses without electricity. Some of the houses do not have four walls. Many houses do not have latrines, though the leaders try to force them to have one. Although there is high population density in the camp for displaced people, housing environments are cleaner than in most Karen houses. Being subject to camp regulations, most houses have to have latrines. Almost all do not raise animals such as pigs, and only one or two families raise goats for milk. Most of the Karen houses are scattered all over the place without strict regulations, so that they can raise animals such as pigs under the houses or near the houses.

Many of the people are from broken families. War took some of the family members from them. The Thai government, which has a duty to send the people back to Myanmar, also took some of their family members away. Work that is the source of income also takes some of their family members away. If there are too many family members to be taken care of, some of the parents have to give their children away. If they have too many children to be taken care of, many women have to remarry with rich and powerful men in order to protect themselves and their children. As a result, the children are not well taken care of. Many of children do not have enough food

and some of them, who are very young, have to take care of themselves. They watch television in their neighboring families' houses and sleep without attention from their parents or the owner of the television. They do not have parents to take care of them while they sleep.

In terms of land, occupation and income, they are in poverty. As mentioned in the social and economic context, the power structure of these communities, especially the Karen communities, is composed of the rich elite at the top and the poor Karen at the bottom. The poor Karen do not have land, cannot speak Thai and do not have skills. Most of the land in the valley belongs to the rich. They have to rent or become wage-earners for the land owners. There are not many jobs for them to do. Many of them are unemployed or underemployed and get lower wages than Thais. Many of them depend on donations from religious groups. Many of them slip away to work in town for better lives. Since they are poor, most of them must also depend on forest products for their living, such as bamboo shoots, mushrooms, honey, animals, wood and vegetables. These activities put them at risk of malaria infection.

Long-distance travel of five to ten days from Myanmar to Thailand allows them to be exposed to malaria. Many of them said that they sleep in the forest without mosquito-nets. Only small and thin blankets such as sarongs were used to cover their bodies from mosquitos and cold weather. They could not depend very much on fire and its smoke to prevent cold and insects because of the Myanmar army. Many of them got sick on the trip.

Migration to search for jobs and missing family members in the forest also exposes them to malaria. Some of them were sent back to Myanmar in other areas that are far away from this one. After being released, they walked back to their family members that were left behind. To sustain their lives in the forest, they work for somebody along the way. They do farm work and cut wood or bamboo for Thai employers. It was found during blood-testing of thirteen of these people in the forest that eight of them were positive for malaria parasites.

Conclusion

Malaria is a personal experience but its causes are embedded in the disrupted communities. The domestic malaria problem of stable communities becomes epidemic as a result of social changes and imported malaria cases from Myanmar. The search for economic prosperity brought migrants from the northeastern part of Thailand to increase malaria cases in other areas. The defeated Karen and other minority groups from Myanmar brought malaria with them. Poverty as a result of being discriminated against, being unable to find work and being unable to access health and welfare services, for example, makes their lives miserable. Poverty or difficulty in sustaining their lives in the communities constantly exposes them to malaria and causes malaria epidemics in ways such as forcing people to live without health resources and forcing them to work in the forest without protection.

Recommendations

Medical and public health measures to control malaria are necessary but they are inadequate. Once the poverty gap increases or migration increases the malaria rate will increase again. Therefore, social and economic measures, such as a poverty eradication program, are needed. However, poverty is based on class inequality and ethnic domination, so that in order to reduce poverty and malaria, we need measures to promote social justice.

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