A study of knowledge, attitudes and practices about dengue infection of people in Moo 5, Na Wang Hin Sub-district, Panusanikom District, Chonburi Province

P. Muangpaisarn
P. Chanyavanich
M. Chayanupatkul
P. panarat
P. Wanchaijiraboon

See next page for additional authors

Follow this and additional works at: https://digital.car.chula.ac.th/clmjournal

Part of the Medicine and Health Sciences Commons

Recommended Citation

DOI: https://doi.org/10.58837/CHULA.CMJ.51.5.5
Available at: https://digital.car.chula.ac.th/clmjournal/vol51/iss5/5

This Article is brought to you for free and open access by the Chulalongkorn Journal Online (CUJO) at Chula Digital Collections. It has been accepted for inclusion in Chulalongkorn Medical Journal by an authorized editor of Chula Digital Collections. For more information, please contact ChulaDC@car.chula.ac.th.
A study of knowledge, attitudes and practices about dengue infection of people in Moo 5, Na Wang Hin Sub-district, Panusanikom District, Chonburi Province

Authors

This article is available in Chulalongkorn Medical Journal: https://digital.car.chula.ac.th/clmjourn/al/vol51/iss5/5
A study of knowledge, attitudes and practices about
dengue infection of people in Moo 5, Na Wang
Hin Sub-district, Panusanikom District,
Chonburi Province

Puth Muangpaisarn*
Poh Chanyavanich* Maneerat Chayanupatkul*
Palakorn Panarat* Passakorn Wanchaijiraboon*
Puthipong Bespinyowong* Piangkhae Parkpibul*
Panida Swangsak* Yodsawee Pormmeechai*
Thosporn Vimolket** Patcharin Kiettisanpipop*
Pichaya Cheupanich* Pichate Roongsirisangrat*
Pimprapa Vejpongsa* Prot Eiamprapai*
Monsineethom Wongkhajornkit* Mattaya Kwananocha*
Maetta Eksaengsri* Maytinee Pajongrak*


Objectives : The purpose was to study knowledge, attitudes and practices about dengue infection of people in Moo 5, Na Wang Hin Sub-district, Panusanikom District, Chonburi Province.

Setting : Moo 5, Na Wang Hin Sub-district, Panusanikom District, Chonburi Province.

Research design : A cross sectional descriptive study

* 5th year medical student, Faculty of Medicine, Chulalongkorn University
** Department of Preventive and Social Medicine, Faculty of Medicine, Chulalongkorn University
Methods: The data were collected by interview with open-ended questionnaires which were divided into 8 sections as well as residence inspection for vector sources.

Results: Of 120 samples collected in 2006, it was found that 3 patients, aged 13-15 years old, were infected by dengue virus. The general knowledge of dengue infection was 10.4 points from the total of 15 points, whereas 15.83% of the population were not aware of any symptoms of dengue infection. The attitudes of the majority seem to be good but the survey revealed that only 60% applied this practical knowledge adequate for control of Aedes mosquitoes. The result showed that the method which the samples can appropriately do was to eliminate stagnant water (78.33%) and the use of Abate sand (75.00%). They also revealed the remaining 185 possible sources for mosquitoes’ larvae in 82% of the surveyed residences, mostly in uncovered water containers. The study also showed that House Index (HI) was 21.7. One out of three of the population was never educated. People learned mostly from public health volunteers (37.50%). The most needed policy was spraying pesticide routinely (54.00%). Their opinions about dengue infection were that the infection was not a problem in their community (29%) while 20% of them thought that dengue virus was difficult to control.

Conclusion: The factors related to dengue infection in the community was multifactorial which are knowledge, attitudes and practices. In order to control dengue, all of the problems mentioned must be resolved.

Keywords: Attitudes, Dengue infection, Knowledge, Practices.
พุทธ เหลืองไพศาล, โพธิ์ จรวยานิชย์, มณีรัตน์ ชญาณกิจภูกุล, พลายา พานรัตน์, ภารสาร รัตนธาราทิพาภาค, พีรพงษ์ เบศสิทธิ์โยงวงศ์, เพชริน ภาคพิบูลย์, ภูมิสา แสงศักดิ์, ศุทธิ์ พรหมพล, ทศพร วิลเลจ และคณะ. การศึกษาถึงกับความรู้ ทัศนคติ และการปฏิบัติตนต่อโรคไข้เลือดออกของชาวบ้านในชุมชนที่ 5 ตำบลบ้านรัฟิน อ่างเกงนิคม จังหวัดชลบุรี. จุฬาลงกรณ์ウェスター 2550 พ.ศ. - มี.ค. 51(5): 281 - 8
Dengue infection is a leading public health problem in Thailand. As we know, this disease can lead to death. In 2005, 30,823 people were infected and 71 people died from dengue, and 25,374 were infected and 45 died in 2006. Although surveillance and public promotion program for dengue control were done regularly, the epidemics still exist.

In Chonburi Province, 2006, we found 74 people with dengue infection among them and 2 people died; comparatively, in 2005, 124 people were found with dengue infection and 2 died. Unfortunately, the numbers of the infected and death did not decrease, so it could be possibly reflected that dengue infection was still a serious public health problem in Chonburi Province.

According to our principle: the prevention is more important than the treatment, studying the knowledge, attitudes and practices about dengue infection will be the initial step to find the most effective way for prevention which will lead to sustainable solutions.

We chose the community of Moo 5, Na Wang Hin Sub-district, Panusankhom District, Chonburi Province as our surveillance site.

**Materials and Methods**

**Population and Samples**

The population in our study included those who were not younger than 15 years old and lived in Moo 5, Na Wang Hin Sub-district, Panusankhom District, Chonburi Province which approximately had 1,000 people.

**Samples**

The samples in our study were the people whose age was not less than 15 years old and lived in Moo 5, Na Wang Hin Sub-district, Panusankhom District, Chonburi Province; they were of good consciousness and were able to give data. Additionally, two samples did not exceed in one family. We calculated the sample size from the following equation: 

\[ n = \frac{Z_{\alpha}^2 P (1-P)}{d^2} \]

where \( P = 0.75 \), \( Z_{\alpha} \) at 5% = 1.96 and \( d = 0.08 \); so \( n = 113 \). Therefore, 120 samples were selected as a sample size. We divided this community into 4 zones and then randomly selected 30 samples from each zone.

**Methods**

A cross-sectional descriptive study was carried out by survey using interview with open-ended questionnaires which were divided into 8 sections which were expected to be the related factors. The questionnaires were composed based on demography, epidemiology, fundamental knowledge, attitudes, knowledge and practices about prevention, government roles on prevention, community needs for solving and community opinions for the existent causes of dengue infection. Apart from residence inspection for vector sources, the number of the available and possible sources in the survey-day were needed to determine the House Index (HI).

**Results**

The interviewees were from 120 people, 61.2% female and 38.8% male, and their mean age was 51 years old (mode = 35 - 44 years). Most of them were from big families (mode = 5 person/family), farmers and private labors (50%) while 23% of them were unemployed. Their average level of education was grade 4 - 6. Only 53 of the populations’ families had income higher than their expenses; 8% of them had no access to any health insurance.
In 2006, it was found that 3 patients, aged 13 - 15 years old, were infected by dengue virus. The general knowledge of dengue infection was 10.4 points from the total of 15 points (Figure 1). While 15.83 % of the interviewees were not aware of any symptoms of dengue infection; 90 % of them did not know that they should not use aspirin during the treatment.

The attitudes of the majority seemed to be good but the survey revealed only 60 % applied this practical knowledge of prevention Aedes mosquitoes. To prevent egg laying of the mosquitoes, the result showed that the method which the interviewees could appropriately perform was to eliminate stagnant water (78.33 %), following by 69.17 %, to lid water containers. To eradicate mosquitoes' larvae, the survey found that, the method which the interviewees could appropriately perform to use Abate sand (75.00 %) and keeping fish in water containers (25.83 %). The survey also revealed the remaining 185 other possible sources of mosquitoes' larvae in 82 % of the surveyed residential area. The possible sources were found mostly in uncovered water containers and utilized pond (Table 1). The study also showed that the residences showed available sources with larvae were up to 26 residential places (29 available sources) from the total of 120 surveyed residences. Hence, the House Index (HI) was 21.7(26/120).

On the issue of governmental roles in dengue-health education, 1 out of 3 of the questioned population had never been educated on the issue. Most people learned from public health volunteers (37.50 %) and medical personnel (20.00 %). Residences receiving Abate sand were 104 out of 120 with 4.8 packs per year and up to 20 % of the householders did not receive enough Abate sand. The residences were sprayed with pesticide 1.82 times per year.

![Figure 1. Number of population with each total scores.](image-url)
Table 1. The number of the available and possible sources for mosquitoes' larvae in the 120 surveyed residences.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Possible sources</th>
<th>Available sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncovered water containers</td>
<td>67 (36.22 %)</td>
<td>10 (34.48 %)</td>
</tr>
<tr>
<td>Utilized ponds</td>
<td>52 (28.11 %)</td>
<td>14 (48.28 %)</td>
</tr>
<tr>
<td>Non-utilized areas</td>
<td>23 (12.43 %)</td>
<td>2 (6.90 %)</td>
</tr>
<tr>
<td>Flower beds</td>
<td>13 (7.03 )</td>
<td>0</td>
</tr>
<tr>
<td>Agricultural ponds</td>
<td>9 (4.86 %)</td>
<td>2 (6.90 %)</td>
</tr>
<tr>
<td>Gutters</td>
<td>9 (4.86 %)</td>
<td>1 (3.44 %)</td>
</tr>
<tr>
<td>Old tires</td>
<td>8 (4.32 %)</td>
<td>0</td>
</tr>
<tr>
<td>Cupboard-legged water supporters</td>
<td>3 (1.62 %)</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>1 (0.54 %)</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>29</td>
</tr>
</tbody>
</table>

* Possible sources means any sources which had potentiality to be egg laying area, which may or may not find mosquitoes' larvae in the survey day

Table 2. The number of community opinions for the existent causes of dengue infection.

<table>
<thead>
<tr>
<th>Causes for existence</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was not a problem in community</td>
<td>34 (28.57 %)</td>
</tr>
<tr>
<td>Dengue virus</td>
<td>24 (20.17 %)</td>
</tr>
<tr>
<td>Myself</td>
<td>19 (16.00 %)</td>
</tr>
<tr>
<td>Community</td>
<td>18 (15.13 %)</td>
</tr>
<tr>
<td>Environment</td>
<td>10 (8.40 %)</td>
</tr>
<tr>
<td>Government</td>
<td>7 (5.88 %)</td>
</tr>
<tr>
<td>Others</td>
<td>7 (5.88 %)</td>
</tr>
<tr>
<td>Total</td>
<td>119*</td>
</tr>
</tbody>
</table>

* One questionnaires could not be evaluated.
Discussion

From the community health survey at Moo 5, Na Wang Hin Sub-district, Panusanikom Distinct, Chonburi Province, the demographic data showed that most of the respondents (51.2 %) were female and the average age was 50. The reason that most of the people who responded to the questionnaire were elderly was because we conducted the survey during the daytime when only the elderly people were at home. Half of the respondents were workers and agriculturists and most of them (23 %) were unemployed. The majority of the respondents did not receive education higher than the sixth grade and only half of the residents had enough income to cover their expenditure. The respondents were mostly under the Universal Health Care Coverage Project but 8 % of them were not converyed with any health insurance. From the questionnaire we found that there were 3 people, around 13-15 years old, had dengue disease in a year. Additionally, data from the Bureau of Epidemiology\(^1,\)\(^2\) reported a high mortality rate from dengue infection in Chonburi Province, so it was reasonable to study people living in this area. Although more than half of the respondents had some knowledge about dengue, almost none of them knew that aspirin was contraindicated in dengue patients and still some of them (15.83 %) did not have any knowledge about the symptoms. Most of the residents knew that dengue was a serious disease but preventable, and the method they knew and used to prevent dengue was to reduce the availability of Aedes larval habitats, but only 60 % of them had done it correctly. Some of the respondents also thought that using insecticides was a suitable control measure; in fact, it was less effective and merely serves as a short-term solution. The data mentioned above explained why we still found mosquito breeding sites in 82 % of the residences and 22 % of them had larvae (House Index = 21.7). Only when HI was less than 10, then it would be enough to reduce the incidence rate of dengue\(^4\), so this area was at risk for dengue transmission and outbreaks. From the aspect of government participation, they should have more appropriate disease preventive strategies by encouraging the residents to understand the process of disease prevention, giving them enough larvicidal sand regularly and promoting them to use alternatives means for mosquito control such as the use of salt with vinegar, removing unnecessary water from containers every 7 days and choosing biological control (e.g. guppies). The data from the survey suggested that most of the residents were not concerned about the problem and thought it was too hard to prevent the disease. Thus, dengue prevention policy would fail if everyone did not understand the seriousness of the problem and had no participation, thinking that it was not their responsibility.

In conclusion, factors related to dengue infection in the community was multifactorial, such as the lack of the knowledge of dengue and information about prevention of the disease, inappropriate control measure, overlooking the existence of the problem and having no realization that it was their problem not others. In order to stop dengue, all of the problems mentioned above must be resolved.

Due to limited financial and human resources, we could not question every house in the sampling frame and could not use probability sampling techniques, so the result interpreted from the small sample size might not represent the target population.
Also, we did not have another area for comparing the studied results. In this study we did not compare the interrelationship between knowledge, attitude and true action statistically, so we could not make an exact conclusion of the leading factor of dengue outbreaks and might obstruct the way to the best solution.

**Acknowledgements**

The author would like to thank Assistant Professor Somrat Lerdmaharit who helped with statistical analysis and Mrs. Mayuree Jiravisit for her excellent supports. Finally, Dr. Prayoot Meun-na MD, the Director of Panusanikom Hospital and all hospital officers for their excellent assistance.

**References**


