

CHAPTER IV

DATA EXERCISE: THA YAI VILLAGE SURVEY ON *Ae. aegypti* LARVAL INFESTATION AND ON PERCEPTION, KNOWLEDGE, AWARENESS AND BEHAVIOR OF PREVENTING DENGUE HAEMORRHAGIC FEVER

4.1 Introduction

The Tha Yai village survey is an activity to collect information of residences based upon the data collection technique and questionnaire guidelines which were developed as a part of my Thesis. The aim of this data exercise is to test this questionnaire guideline that will later on be used in the evaluation part of the proposed Persuasive Campaign Project. In addition, the necessary information on culture and behavior aspect of people in preventing Dengue Haemorrhagic Fever is collected which will be used in the development of the proposed project.

The information gathered will be the base-line data to provide more understanding of the people in Tha Yai before launching the persuasive campaign. Therefore, this study is a cross-sectional survey to explore the relevant information.

4.2 Objective of data exercise

(1) To determine the information that related to perception, knowledge, awareness and behaviour of Dengue Haemorrhagice Fever of Tha Yai residences.

(2) To test larval survey form and determine the Aedes infestation for use as a measuring guideline in pretest of Persuasive Campaign Project.

(3) To test the quality of questionnaire guidelines in term of wording, sequence understanding of people etc. for use in the evaluation of the Persuasive Campaign Project.

4.3 Methodology

4.3.1 Study Design

The methodology used in this data exercise is Descriptive Study with the Cross-Sectional Design. The purpose of using Descriptive study is to collect, analyze and interpret data that describes the community of Tha Yai village.

Describing the characteristic and knowledge of the Tha Yai people is important for the base line data, to know who they are and what they know. This data maybe used for administrative purposes such as managing any programs conducted at Tha Yai village.

4.3.2 Data collection and data management

The data exercise was implemented from January –April 2002. Preliminary information of Tha Yai was gathered by phone and visiting both the Ban Phong Public

Health Office and Tha Pha Health Center in February 2002. The instruments were developed after gathering the information from the visits.

The data collection was done in the field during 24-29 March 2002. The instruments that were used in the field were (1) Face-to-face (interviewed) questionnaire (2) *Ae.aegypti* larval survey (3) Focus group discussion and (4) Observation, which used both quantitative and qualitative data collection. The data collection team comprised of the investigator and 2 residents of the Tha Pha sub-district who are familiar with the area.

After collecting data in the field, the data were calculated, summarized, interpreted and analyzed in April. Qualitative results were used to describe the meaning or to clarify the outcomes score from the questionnaire. The statistical Package of the Social Sciences (SPSS) was used to measure reliability consistency of the questionnaire.

Detailed description of each data collection instruments implemented in the data exercise is explained below. This includes the assessment of the instruments' validity and reliability.

4.3.3 Quantitative Data Collection Methods

Instruments

(1) Face-to-face (interviewed) questionnaire

Closed-end questions were used because they provided a greater uniformity of response and easy management. The main point of creating this kind of questions is to let the interviewer follow the exact words and sequences to avoid missing data and to get the answers in the same pattern. The questionnaire created for this survey is illustrated in Appendix 1.

Validity and reliability

Validity refers to the designing of data collection instrument, and must ensure that it is correctly measuring what it is supposed to measure. Content validity in the questionnaire was checked by an expert in the Dengue Haemorrhagic Fever Field. She works in Ban Phong Public Health office, Ratchaburi. She checked the questions for accuracy and gave specific advise on the knowledge part of the questionnaire, i.e. if the statements on knowledge were correct or incorrect, which helped in measuring the scores of the answers. The final questions that use in the questionnaire were rechecked with this expert to ensure that the content is valid, before using the questionnaire.

Reliability refers to consistency in the measurement process. This study used internal consistency to check the answer from the questionnaire to ensure that the items reflect what is to be measured and the level of difficulty of all items is the same.

Sampling

The sampling in data exercise was conducted during a short period of time therefore, In the limited time available it was necessary to be very specific and accurate in gathering the necessary data. The data collection exercise was meticulously planned and collected as the surveyor did not have time to go back and collect any data again.

Sample size

Due to the time limitation, 10 % of the total households in Tha Yai village were sampled in this survey. The sampling frame is households and out of approximately 300 households in Tha Yai Village, 30 households were sampled as mention in the sampling technique.

Sampling technique

Modified cluster sampling that a project of Unicef had done in rapid assessment in Malawi was applied. The sampling method was used in Nutrition Programme Planning, project Reorientation, and Training in Malawi by Berggren and Beatrice Mtimuni.

In the program, households were chosen through a modified cluster sampling technique. Beginning from a central point in each village, teams went north, south, east, and west, approaching each family in their path.

As Tha Yai village had a main road cut in between so the village was divided into 2 sides. Therefore, the center of the village was difficult to estimate. The sampling was done in both sides. The techniques used in each side of the road by circling the pen and wait until it stopped. Any head and tail direction that the pen pointed to, the surveyor team went to interview. Four groups of households in Tha Yai village were sampled.

Study location

The study location was Tha Yai village, Tha Pha District in Ratchaburi Province, Thailand.

Study duration

Face-to-face (interviewed) questionnaire was used for interview Tha Yai villagers on 24 – 25 March 2002.

Study population

Inclusion criteria: Residences in Tha-Pha sub-district aged over 15 years old.

Exclusion criteria: Children aged less than 15 years old and non- permanent residents in Tha-Pha sub-district

(2) Ae.aegypti larval survey

Ae.aegypti larval survey can calculate the rate of emergence of newly-emerged adults to adult mosquito population. This rate can vary widely in different types of containers. It is important to know how many containers in the household and how many containers have larval infestation because only small numbers of larva can be develop to mosquitoes and they can hatch many times in their life cycle. Please see the *Ae.aegypti* larval survey from that created for this survey in Appendix 2.

Study location

The study location was made at the same place of conducting face-to-face (interviewed) questionnaire at Tha Yai village, Tha Pha District in Ratchaburi Province, Thailand.

Study duration

Ae.aegypti larval survey was made at the same day of conducting face-to-face (Interviewed) questionnaire on 24 – 25 March 2002.

Sample

The samples of households and sample size were 30 households which ware the same households as face-to-face (interviewed) questionnaire.

4.3.4 Qualitative survey

Instruments

(1) Focus group discussion

The purpose of the focus group discussion was to collect the information and compare with the quantitative results obtained from questionnaire.

Five subjects participated in the Focus Group Discussion, which lasted for 1 hour and fifteen minutes. The discussion was conducted at the Tha Pha Health Centre. The five participants were health volunteers in Tha Yai Village. Health volunteers were chosen as key informants because they have a good understanding of people and the Dengue problems, since they are highly involved in preventing Dengue Haemorrhagic Fever in the village because they are the informants, it is important to learn more about participants' experiences.

During focus group discussion, a Snowball technique was used in this study. One individual started commenting on some issues; and yet another participant added more information to the group discussion. This snow ball technique went on continuously, effectively because the topic matched their concern which resulted in much discussion in the group. The participants felt at ease in agreeing and not agreeing and gave their reasons.

Sampling and sample size

According to each of 20 villages in Tha Pha sub-district have 5 health volunteers in each village. Therefore, the sample size for conducting the small focus group discussion consisted of 5 key informants of health volunteer.

Sampling technique

The purposive technique was used because the health volunteers were acted as the key informants and the information needs was the experience in working with people of Tha Yai village that concerned with dengue haemorrhagic fever prevention.

Study duration

The small group discussion was held on 29 March 2002 after the quantitative data and observation were gathered. The previous data from quantitative survey and observation were the guideline questions to ask in the small focus group discussion.

Study population

Inclusive criteria: Health volunteers in Tha Yai village.

Exclusive criteria: Health volunteers outside Tha Yai village.

(2) Observation

Observation technique was used for checking on and supplementing the information obtained from quantitative survey. Observation mainly focused on the environment and living style of people in Tha Yai, in order to find the awareness of the people about the breeding source of mosquitoes in their households.

The observer as participant technique was used. In this case an observer played the role as surveyor involved in this survey. The observer interacted with Tha Yai villagers but was not part of their community. Please see the observation note that created for this survey in Appendix 3

Sampling and sample size

The sample size of making observation was 30 households which was the same household as face-to-face (interviewed) questionnaire.

Study duration

The observer observes the villagers at the same time as using questionnaire and carrying out the larval survey on 24 – 25 March 2002

Study location

The study location was made at the same place of conducting face-to-face (interviewed) questionnaire at Tha Yai village, Tha Pha District in Ratchaburi Province, Thailand.

4.4 Results

4.4.1 Results from survey

1. Description of Tha Yai Village

Tha Yai Village one of the twenty villages in Tha Pha sub- district, is located in Ban Phong district, in Ratchaburi Province. Ratchaburi Province is in the western region of Thailand. Tha Yai village is located on the way from Bangkok to Kanchanaburi which is a tourist route for travel from Bangkok to Kanchanabuti. It is convenient to visit because the village is divided into 2 sides of the road. The left side (if you come from Bangkok), is the Mea Klong river which is situated at the back of Tha Yai village.

The total population in Tha Yai village that was recorded by Tha Pha Health Center was 1,488 people as of November 2001 and 284 households as of 18 June 2001. In reality these numbers are not accurate because households without numbers were not included. The public health officer in Tha Pha estimates that the households in Tha Yai should be around 10% more than the official counts.

The average family income of Ban Phong district is 6,000 Baht- as indicates in the records at Ban Phong Public Health Office. Mapping of the village was done (see Appendix 4) for this data exercises because there is no map of Tha Yai village available. This is a rough map of the village for use in the thesis and more details map may be develop during implementation of the proposed project.

2. Demographic Characteristic

The survey was conducted during the daytime and most of the respondents were female which indicated that they remain at home during daytime, whereas younger people and male members are away at work. Mostly female and elderly are stay at home during daytime as in the table 4.1 shows that during the survey there are females 73.3 % only 23.7% are males.

Forty percent of respondents finished high school and only 3.3% never finished any school. There is no farmer, may be because they are not home and in the field. Thirty six percent of respondents have family income per month over 12,100 Baht-.

Table 4.1: Demographic Characteristics of Tha Yai villagers (survey 30 households.)

Characteristic	Frequency	Percentage
Gender		
- Male	8	23.7
- Female	22	73.3
Age		
15-20	1	3.3
21-30	7	23
31-40	9	30
51-60	3	10
61-70	5	16.7
70-80	3	10
81-90	1	3.3
Marital status		
- Single	6	20
- Married	18	60
- Divorce, Separate	1	3.3
- Widow	5	16.7
Education		
- Did not complete any school	1	3.3
- Completed Primary School	11	36.7
- Completed Secondary School	2	6.7
- Completed High School	12	40
- Completed undergraduate	4	13.3
Occupation		
- Government employee	3	10
- Business employee	1	3.3
- Shop owner	4	13.3
- Workers	9	30
- Farmer	0	0
- Housewife	7	23
- Unemployed/retire	5	16.7
- Student	1	3.3

Table 4.1 (cont)

Characteristic	Frequency	Percentage
Family Income (per month)		
Less Than 2,200 Baht-	2	6.7
2,201-4,000 Baht-	7	23
4,100-6,000 Baht-	2	6.7
6,100-8,000 Baht-	1	3.3
8,100-10,000 Baht-	6	20
10,100-12,000 Baht-	1	3.3
Over 12,100 Baht-	11	36.7

3. Flow of Dengue Haemorrhagic Fever information

All of 30 respondents answer that there was no public announcement in this village. Most of the people in Tha Yai village received the information of Dengue Haemorrhagic Fever from poster and brochure which were distributed by Health Volunteers as shown in table 4.2.

Table 4.2: Frequency distribution of Dengue Haemorrhagic Fever Information that villagers received in Tha Yai village.

Villagers received information from	Frequency	Percentage
Health Volunteer	18	60
Sanitation/Public Health Officers	15	50
Mobile Team	10	33.3
Brochure/Booklet	8	26.7
Poster	7	23
Teacher	6	20
Monk	6	20
Public announcement	0	0

The most information that were provided by health volunteers were the most interesting and knowledge of Dengue Haemorrhagic Fever come from Health Volunteers as shown Table 4.3 and Table 4.4.

Table 4.3: Frequency distribution of Dengue Haemorrhagic Fever Information that villagers interesting in Tha Yai village.

The most interesting information come from	Frequency	Percentage
Health Volunteer	10	33.3
Sanitation/Public Health Officer	4	13.3
Brochure/Booklet	2	6.7
Teacher	2	6.7
Poster	1	3.3
Mobile Team	1	3.3
Head of Community	1	3.3

Table 4.4: Frequency distribution of Dengue Haemorrhagic Fever Information that provide the most knowledge in Tha Yai village.

The most knowledge of DHF come from	Frequency	Percentage
Health Volunteer	11	36.7
Sanitation/Public Health Officer	4	13.3
Brochure/Booklet	2	6.7
Teacher	1	3.3
Poster	1	3.3
Mobile Team	1	3.3
Head of Community	1	3.3
Monk	1	3.3

Sixty-three percent (19 respondents from 30 respondents) stated they received the knowledge of getting rid of mosquitoes in the house and 17 out of 19 respondents (89.5%) apply this knowledge in their daily life. These are the highest numbers among other information that they received. This is contrast from the numbers of dengue fever awareness, only 29.41% or 5 respondents from 17 who receive the knowledge of dangerous of dengue fever dangerous but did not have any measurement of prevention in their daily lives, as shown in the Table 4.5.

There are 8 out of 11 Respondents who applied their knowledge of taking care DHF infected children into practice are the person whose children used to get Dengue haemorrhagic Fever or their neighbours.

Table 4.5: Content of Dengue Haemorrhagic Fever information that villagers received in Tha Yai village.

Dengue Information	Apply in their Daily life/awareness of DHF			
	frequency	percentage	frequency	percentage
1. Get rid of mosquitoes in house	19	63.3	17	89.47
2. Aedes Mosquitoes prevention	18	60	16	88.89
3. Danger of Dengue Fever	17	56.7	5	29.41
4. Symtoms of Dengue Fever	11	36.7	8	72.73
5. Take care DHF infected children	11	36.7	8	72.73
6. Teaching children about DHF	10	33.3	9	90
7. Aedes mosquitoes habit	8	26.7	6	75

Only thirteen percent of respondents assess themselves that they received a lot of Dengue Haemorrhagic Fever in the village and 23% of total study population assess

themselves that they received nothing. The moderate score is higher (36.7%). In comparing those who received a lot (13.3%) and a little (26.7%), there are 2 times of people assessing that they received a little information as shown in table 4.6.

Table 4.6: Level of Dengue Haemorrhagic Fever information that villagers received from the information sources in Thai Yai village.

Level	Frequency	Percentage
A lot	4	13.3
Moderate	11	36.7
A little	8	26.7
Nothing	7	23

4. Awareness and knowledge of DHF prevention

Most of the respondents are aware of the Dengue Haemorrhagic Fever prevention strategies as indicated in Table 4.7. However, there are few people (66.7%) aware of the need to get rid of larvae after checking the containers in their houses.

Table 4.7: Awareness of Dengue Haemorrhagic Fever Prevention.

Dengue Haemorrhagic Fever prevention	Frequency	Percentage
Check Larval in the your house	24	80
Prevent mosquitoes while sleeping in daytime	24	80
Helping to get rid of garbage	24	80
Enthusiasm to get rid of mosquitoes after someone get Dengue Haemorrhagic Fever	24	80
Get rid of larval after checking	20	66.7

As shown in table 4.8, all 30 respondents have using water containers in their households. Twenty three percent of them take the larvae away after they saw them in

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fifty percent burn their garbage which can store the water after rain. 5 out of 20 respondents who use drinking containers clean their containers once a week and the rest 15 put the cover immediately after use.

There are less than 50% of respondents have ant traps and lotus bowl with water inside. 4 out of 12 respondents who use ant trap with water inside put salt with water and 5 out of them clean the ant traps once a week.

Table 4.8: The behavior of prevent mosquitoes from laying eggs

Behaviour of prevent mosquitoes from laying eggs	Frequency	Percentage
Have using water containers in their households.	30	100.0
Have drinking water containers.	20	66.7
Have water container in their toilet/bathrooms	30	100.0
▪ Clean their containers in the toilets/once a week. (Yes)	14	46.7
Have vases with water inside.	27	90
▪ Clean their vases once a week. (Yes)	24	88.9
Use ant traps with water inside.	12	40.0
Have lotus bowl with water inside.	27	90.0
Have spirit houses	27	90.0
▪ Clean their dishes that offers to the spirit houses once a week. (Yes)	25	92.6
Get rid of their garbage in their households.	30	100.0
▪ Burn their garbage's.	13	43.3
▪ Put their garbage's in the bin and waiting for sanitation worker to collect.	17	56.7

As shown in Table 4.9, all respondents know that *Ae.aegypti* mosquito is a vector of the Dengue Haemorrhagic Fever and parents have taken their children to the hospitals immediately if they suspected that their children are infected with Dengue Haemorrhagic Fever.

The knowledge testing in this questionnaire is a simple question that the people should know the characteristic of Dengue Haemorrhagic Fever. Respondents have high knowledge of risk factors, symptom of Dengue Haemorrhagic Fever, and Dengue Haemorrhagic Fever prevention.

However, less number of respondents know about (1) The normal symptoms of Dengue Haemorrhagic Fever, i.e., fever, cooled body, heavy stomach ache and dizzy. (2) DHF may reinfect the person (3) Epidemic of Dengue Haemorrhagic Fever from neighbors cannot spread into other village.

Table 4.9: Knowledge of Dengue Haemorrhagic Fever Prevention

Knowledge	No.	%
Risk factors		
▪ Does <i>Ae.aegypti</i> is a vector of Dengue Haemorrhagic Fever?	30	100
▪ Can healthy children get Dengue Haemorrhagic Fever after mosquitoes bite?	17	56.7
▪ Do the persons who are bitten by mosquitoes during the daytime have a chance to get Dengue Haemorrhagic Fever?	25	83.3
▪ Do children who play in the dark corner have a greater chance to be bitten by <i>Ae.aegypti</i> mosquitoes than in open place?	27	90
▪ Can Adults get sick from Dengue Haemorrhagic Fever?	23	76.7
▪ Can mosquitoes larval in your house spread Dengue Haemorrhagic fever?	21	70
▪ Does any person who used to get sick from Dengue Haemorrhagic Fever can get Dengue Haemorrhagic Fever again?	15	50
▪ Can we prevent Dengue Haemorrhagic Fever?	28	93.3

Table 4.9 (cont)

Knowledge	No.	%
▪ Is it necessary to get rid of mosquito's larval if your family never has Dengue Haemorrhagic Fever patients in their home?	23	76.7
▪ Can Dengue Haemorrhagic Fever from the neighbour's epidemic to your village?	17	56.7
Symptoms		
▪ Should Parents/caretakers take their children who suspected to get sick from Dengue Haemorrhagic Fever to see the doctor immediately?	30	100
▪ Do the fever, cooled body, heavy stomach ache and dizzy are the normal symptom of Dengue Haemorrhagic Fever?	12	40
▪ Are the red spots on the body show a kind of Dengue Haemorrhagic Fever' symptom?	28	93.3
▪ Will dengue haemorrhagic patient have a fever?	21	70
▪ Can dengue haemorrhagic fever cause death?	24	80
Prevention		
▪ If you get rid of garbage that store water inside, does it help to prevent Dengue Haemorrhagic Fever?	20	66.7
▪ Can we prevent the <i>Ae. aegypti</i> larval mosquitoes?	25	83.3
▪ Can adult mosquitoes be reduced if we change water in the vases, dishes under the tree pots weekly?	21	70
▪ Can mosquitoes laying eggs if we put salt, vinegar and detergent in ant traps every month?	20	66.7
▪ Do the children who are being sick by Dengue Fever need to use bed net while they are sleeping?	24	80
▪ Can you prevent and reduce the incidence of Dengue Haemorrhagic fever if you get rid of <i>Aedes</i> mosquitoes, <i>Aedes</i> Larval and mosquito breeding sources?	26	86.7
▪ Will the Dengue Haemorrhagic fever patients be less, after you get rid of mosquito breeding source?	28	93.3
▪ Can you get rid of <i>Aedes</i> mosquitoes by releasing larvae eating fish in the lotus bowl?	27	90
▪ Has anybody have a chance to be infected with dengue virus?	27	90
▪ Does <i>Ae. Aegypti</i> mosquito like to lay eggs in the stream water?	21	70

4.4.2 Results from *Ae. aegypti* Larval survey

The risk levels of HI, CI and BI used in this survey are based on the standards set in the National Dengue Fever Control Project in Honor of His Majesty the king of Thailand's 6th Cycle Birth celebration in 1999-2000. In results from this data exercise are as follows:

1. House index (HI) measures the percentage of houses infested with larvae and/or pupae. Risk level should not be more than 80%.

$$HI = \frac{\text{Number of houses infested} \times 100}{\text{Number of house inspected}} = \frac{22}{30} \times 100 = 73.33$$

2. Container index (CI) measures percentage of water-holding containers infested with larvae or pupae. Risk level should not be more than 10 %

$$CI = \frac{\text{Number of positive containers} \times 100}{\text{Number of containers inspected}} = \frac{60}{394} \times 100 = 15.23$$

3. Breteau index (BI) measures number of positive containers with larvae per 100 houses inspected. Risk level should not be more than 50%

$$BI = \frac{\text{Number of positive containers} \times 100}{\text{Number of houses inspected}} = \frac{60}{30} \times 100 = 200$$

Although the house index is not higher than 80% but Tha Yai village may still be at risk because the survey was done in March which is a dry season. The epidemic usually takes place during the rainy season. Their environment will be more humid and there is more water storage in their waste containers or garbage.

There are many positive containers with larval infestation as shown in the above container index that the result is 15.23% which is in the high risk level.

The BI index of 200 is very high which means that on average; each household has more than one container with larvae. Dr. Suchat Jataasin at epidemiological division, Ministry of Public Health recommends that BI index should be 0. It means no larva in that area; Therefore, Dengue Haemorrhagic Fever can be prevented.

4.4.3 Results from Observation

From observation, every house has traditional water container (water jar). From 30 houses, 52 out of 161 containers did not have cover. Although, many of them did not have the covers, the containers have abated sands. This kind of container have many sizes from small they use in the bathroom to the very big one out side that 3-4 people can stand inside these containers.

Some containers are dry without cover on it. Observation was done in a dry season; therefore, there is no water inside most containers. However during the rainy season, which is the epidemic period, they might have stagnant water for mosquitoes breeding. The important thing I found out is that, in many households, there was larva infested in the bathroom with unused sinks which are possible breeding places.

People here are diverse, it may be because the high way from Bangkok to Kanchanaburi constructed in the middle of the village. At the time of observation, people in the village were mostly elderly with small group of mostly elderly people living near the river who are related to each other. Some of these old people did not welcome our team when we ask them to interview and check larval in their house. There were also children in the houses.

There were more people in one side of the highway. This group was big and more developed. We found many small shops such as grocery store, hair dressing and

local restaurant. No posters of preventing Dengue Haemorrhagic Fever in the village were seen.

4.4.4 Result from focus group discussion

In Tha Pha sub-district, there are 5 health volunteers from each village. Five Health volunteers in Thai Yai village participated in this focus group discussion. There were 4 women and 1 man. Their ages were between 40-70 years old.

The following is the finding of Health Volunteers discussion.

The question was asked about the posters of Dengue Haemorrhagic Fever in the village. The volunteers mentioned that the posters are posted only at the entrances of the village.

From 30 houses that I surveyed, there were 22 people answered that their house used abate sands so the question is asked about the process of distributing abate sands. They say the sand is distributed every three months. They promoted the quality of abate sands but some house did not use them. Someone put the sands on the top of the cardboard and never use it.

I mentioned the numbers of people who use abate sands is quite high so it means that abate sands is popular among villagers. The volunteers said because there are a lot of mosquitoes and we promote them to use the sand.

The question is raised about the behavior of uncovering the container. The volunteers tell their experiences that these people like to fill water all the time until the containers are full. Someone does not want to put cover on because they afraid of fire and want to be prepared.

I raise the question from my observation that mostly who did not put covers on the containers because they put abate sand. All volunteers agree with this statement. I raise another question to ask about this behavior that abates sands is very expensive. It should be better if we persuade them to cover the containers instead of using abate sand. Some of them said they told them to put salt or detergent others instead of abate sand because the sand is very expensive. But some volunteers want more abate sand from public health officer because it is uncomfortable to go to the villagers' house and tell them to prevent Dengue Haemorrhagic Fever without providing any sands.

I ask more about the persuasion of changing their behavior to put cover on the containers. They say Tha Yai villagers are the most difficult people in Tha Pha sub-district.

There are 9 elderly respondents aged over 60 years old who stay at home during daytime and they are the key persons who take care of the household cleaning. I tell these numbers and ask about the influence of these people in getting rid of *Ae.aegypti* and preventing Dengue Hemorrhagic Fever. They are active to say that these old people think that they are going to die so there's no need to get rid of mosquitoes. These people are lazy and do not think about younger people at home. Sometime they wait for the daughters/sons to agree with them to do something in the houses. The volunteers' suggestion is to have public announcement in Tha Yai village because everyone in the village can hear. The children are very important persons that can help on this. Children will tell their parent what they heard and ask their parents to do. And volunteers will work easier.

From the question in the questionnaire, some of respondents answer that they don't know if any family have been infected with Dengue Haemorrhagic Fever it is

necessary to get rid of larval. Volunteers say they do not know because we (volunteer) put abate sands for them so they have not see while we are putting. They do not practice by themselves.

From the larval survey, it shows that 22 houses out of 30 houses are infested with *Ae. aegypti* larvae. I mention that this numbers quite high and ask about the main things that the villagers do not want to get rid of larval. Volunteers say these people do not get rid of them if there is no one in their house was infected Dengue Haemorrhagic Fever. Some volunteers have to threaten them with fear of getting Dengue Haemorrhagic Fever can lend to death.

Some volunteers mention that in some people in Tha Yai keep the mosquitoes' larvae to feed fish. I ask more how to get rid of non use larval if not fed to the fish. The volunteers say they can help if they want to. The fish will not eat pupae so they have to feed fish before that. They can throw pupae away. I also mention that from the questionnaire survey nobody accept that they sell mosquito larval as a business. Volunteers say these people will not accept but they feed fish to sell and give larval in their house to feed.

4.4 Discussion

Result from quantitative survey

(1) The data from demographic data might conclude that the culture here is mixed. The traditional Thai culture exists here with extended family live together in the same household. However, they are not farmers but work outside the home in town or other places for government sector, business sector, etc. Their level of education can

work at least as factory workers and their family incomes match their occupation so their standard of living is not low.

(2) Dengue Haemorrhagic Fever knowledge's are provided to people by health volunteers and health officials and municipal officials but not by public announcement. Their knowledge is above average. Especially, they know how to get rid of mosquitoes/larvae in their house but it does not mean that they use their knowledge in getting rid of mosquitoes/larvae. Sometime these people see larvae as a part of their environment even though they know the consequences of mosquito's bites. They are aware of checking larvae in their house, however, after they have seen the larvae they do not get rid of them.

(3) People prefer to put abate sand in their water containers, which are not for drinking, rather than clean-up water once a week. These kind of behavior will waste government money because the abate sand is very expensive.

(4) The *Ae. aegypti* larval survey is made in March which is the dry season and the numbers of indices are quite high, especially, the Bretau index which is four times higher than the criteria of risk level of larval infestation. Moreover, the larval infestation will increase during the rainy season because the environment is suitable for Aedes to have more breeding sources from water storage. It can be assumed that Tha Yai village is a high risk area of epidemic if people here do not help in getting to get rid of Aedes larvae.

(5) Triangulation is used to check the consistency of finding generated by different data collection methods. It is found that results from qualitative data collection method and quantitative data collection method are in argument on some issues and in disagreement in other.

Examples are as follows:

5.1 Agreement

All 30 respondents from questionnaire answer that there is no public announcement in Tha Yai village. From the focus group the volunteers' confirm that there is no equipment for having public announcement in Tha Yai village. Their suggestion is to have public announcement in Tha Yai village because everyone can hear.

Forty six percent of respondents from the questionnaire clean their containers in the toilets/ bathrooms once a week which is less than half. This point is related to the important thing I found out from observation. Mostly, larval infested in the bathroom and some sinks that they did not use anymore.

The result from container index (CI) which means percentage of water-holding containers infested with larvae or pupae = 15.23. This number is in the risk level of DHF occurrence which is related to the observation. I take a field note and have seen every house has traditional containers, some of them are very big which 3-4 people can stay inside. From 30 Houses I noted that they have 161 containers and 52 of them did not have cover.

5.2 Contradiction

Twenty two out of thirty respondents (73.3%) from the questionnaire put abate sand in their containers. This high number shows that the abate sand is popular. However, in the focus group discussion the health volunteers said they put abate sand for the villagers. The villagers had not seen while the volunteers were putting. The villagers did not practice by themselves. All volunteers agreed with the statement that mostly who did not put covers on the containers because they put abate sand.

(6) Internal consistency of the data collection instrument was only tested for part 5 (15 questions) in the questionnaire. The statistics showed a CORBA alpha with a value of 0.8478 (please see appendix 8). It means the instrument is consistent because the result is more than 0.8. If less than 0.8 it means the instrument is not consistent.

4.6 Lesson Learned

4.6.1 The process of doing surveying both quantitative and qualitative survey has to be improved as follows:

(1) Instruments

(1.1) Questionnaire

For people older than 60 years old, I have to explain more and use very simple language. In the part perception of DHF information, awareness and behaviour of preventing DHF are not in sequences and clear format. Some respondents are confused with the question which the content are related together but they think that each question is not related to each other.

(1.2) Focus Group Discussion

There is no obstacle to conduct a focus group in Tha Pha Health Center because of the cooperation of Tha Pha public health staffs.

(1.3) *Ae.aegypti* larval survey and observation

This is difficult activity because sometime the residents do not let the surveyor check the larvae in the containers. They fear of being caught in doing something incorrectly as the surveyor should be the same person as interviewer or surveyor and

interviewer should go and sit together in order to get familiar with the respondents. This will help the respondent trust the interviewer and surveyor. Then it will be easy to ask for checking containers in their houses.

(2) Time

The time used in data exercise is limited. The data collection is not what I expected. The interviewer tried to finish interviewing within 2 days. The interviewer for the questionnaire should be trained before to the field because some interviewer did not fill every question. I have to ask the details again with her. And there are some questions that interviewer did not read clearly so the answer is different from what question want to ask.

(3) Data collection

The sample size is only 30 households which are very small that the results of data collection cannot be generalized. Therefore, the information gained from data collection can be used to develop the project proposal.

- 4.6.2 Information gained to use in the project proposal.

(1) The data is an evidence to support that Persuasive Campaign Project Proposal can help to raise public awareness in public because most information of Dengue Haemorrhagic Fever in Tha Yai village was provided by Health volunteers and health staff and very little from Public Relations.

(2) Cleaning-up water once a week behavior is a key point to promote because abates sands is expensive that cost 200 Baht- per Kilogram and most of using water containers around houses and in the toilets/bathroom are uncovered.

(3) From focus group I found that some houses are feeding lava to sell as a part time job or little business. This information is very important because this problem may be difficult to solve. They have to earn money for living. Next survey the surveyor should review more about this issue. However, this information can be developed in the project proposal. The message in the campaign will create to convince the people in getting rid of pupae after they take the larval for selling or feeding the fish.

(4) The questionnaire can be used in the evaluation part of the project proposal. The questionnaire guideline is satisfied and can be used in the pretest and posttest in the evaluation part of the Persuasive Campaign Project. I would recommend that the awareness part in the questionnaire should include more questions for better evaluation. The 2-3 questions in the knowledge part which is very easy should be changed for the proposed project. In addition, specific question about the knowledge to be gained from the campaign should also be included.

4.7 Limitation

The limitation that I face during the field activity of collecting data in Tha Yai village is that my gender. As a woman, I cannot work alone for my safety so I have to wait until my friends are available to collect data with me. I cannot set my schedule of collecting data.

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