CHAPTER IV

DATA EXERCISE

A Cross Sectional Survey for assessing knowledge, attitude and practice of women in dengue fever transmission and larval density in Koksaad village, Koksaad Subdistrict, Prasat District, Surin Province, Thailand

4.1 Introduction

This study aims to develop a model to educate women in Koksaad village in the control of dengue fever. The proposed intervention is participatory learning program in women: An intervention to reduce the mortality and morbidity of DF/DHF. There are 12 months of the study period. The information gathered from this data exercise will be used in designing the intervention method and the lesson learned from the data exercise will be used to improve further data collection during implementation and evaluation.

4.2   Objectives of The Data Exercise

- To collect detailed information from women, i.e. demographic data.

- To obtain information on knowledge, attitude and practices related to dengue, dengue transmission and prevention.

- To determine the larval densities of Aedes Aegypti mosquitoes.

- To determine the house-, container- and Breteau Indices for use as proxies for measuring behavioural change post intervention.

4.3   Methodology

A cross sectional survey is used as the research methodology. The target population consisted of 325 women between the age of 15 and 60 years. The study area was Koksaad village, Prasat district, Surin province. The sample consisted of 60 women. They were selected by simple random sampling, according to the following criteria:

Inclusion criteria

1. Women within the age group of 15-60 years.

2. Women permanently residing in the village.

Exclusion criteria

Women living, but not permanently residing in the village.

4.3.1 Instrument

The instrument used in this study was interview questionnaires, in-depth interview with key informant and a larval density survey.

4.3.2 Data collection and data management

Data collection was done on 29 January 2001 by an interviewer following a questionnaire guideline. The questionnaire was adapted from the thesis of Montree Maneesri, student of Faculty of Public Health, Mahidol University, 1999. The reliability of the questionnaire is 0.70 and has been tested for content validity in 10 women between 15-60 years from another, but identical, village. The questionnaire was checked, mistakes eliminated and was used after testing. The information obtained was analysed by using the statistical Package of the Social Science (SPSS). The in-depth interviews with the key informants were also done on 29 January 2001.

4.4 Results

4.4.1 Demographic data

The total sample size was 60. The mean age of the people in this study was 39 years. There were 60 females as respondents. The age ranged from 15-60 years with a mean of 39 years. Most of the women were married (85%) and 85% were farmer.

With regard to education, 75% completed primary school, 11.7% attended secondary school and 11.7% were illiterate. The annual family income ranged from 500-2,000 Baht for most of them (85%). The family size for 71.7% ranged from 4-6 persons, the mean score of family member are 4.3 persons. Of the sample 33.30% have children below 15 years of age in the family and 26.7% have no children under 15 years of age. Most of the respondents (48.3%) received the information related to dengue fever from the local Public Loudspeaker Broadcasting in their village. Of the respondents 95% had no dengue case in their family, only 33.3% had one dengue case in their family during the past one-year (the case was reported from the hospital). The demographic or baseline characteristics of the sample are shown in the table 4.1.

4.4.2 General data

Table 4.1   Baseline Characteristic of the study population

Range	Characteristics	Number n=60	Percentage
1	<u>Sex</u>		
	Female	60	100.0
2	<u>Age</u>		
	15-20 years	5	8.3
	21-30 years	14	23.3
	31-40 years	14	23.3
	41-50 years	12	20.0
	51-60 years	15	25.1
	X = 39, S.D = 12.85 Min = 16, Max = 60		
3	<u>Education</u>		
	Illiterate	7	11.7
	Primary school	45	75.0
	Secondary school	7	11.7
	High School	1	1.7
	Under graduate	-	-
4	<u>Marital status</u>		
	Single	6	10.0
	Married	51	85.0
	Divorced or separated	3	5.0
	Widowed	-	0
5	<u>Occupation</u>		
	Housewife or head of family	2	3.3
	Labourer	1	1.7
	Government employee	-	-
	Rice farmer	51	85.0
	Merchant	3	5.0
	Employee	1	1.7
	Other	2	3.3

Continued

Range	Characteristics	Number n=60	Percentage
6	Annual Family Income x = 1,873.33, S.D = 2,580.82 Min = 500, Max = 2,000		
	500-2,000 Baht	51	85.0
	2,001-4,000 Baht	6	10.0
	4,001-6,000 Baht	2	3.3
	6,001-20,000 Baht	1	1.7
7	Family member		
	1-3 person	11	18.3
	4-6 person	43	71.7
	7-9 person	6	10.0
	x = 4.3, S.D. = 1.36, Min = 2, Max = 8		
8	Any children under 15 year in your family?		
	None	16	26.7
	One	20	33.3
	Two	19	31.7
	Three	5	8.3
9	Have you ever received information related to Dengue fever?		
	Yes	42	70.0
	No	18	30.0
10	Dengue fever source of information:		
	Public loud speaker system	29	48.3
	T.V	1	1.7
	Radio	9	15.0
	Printing media, poster, pamphlet, newspaper	4	6.7
	Public health officer	7	11.7
	student, pupils	1	1.7
	Other	9	14.9
11	In the past one year, were there any dengue patients among your family members?		
	One person	2	3.3
	More than one Person	1	1.7
	None	57	95.0

Table 4.2   Responses to knowledge statements

Range	Statement	TRUE		FALSE	
		Number	Percentage	Number	Percentage
1	Cause of Dengue fever	46.0	76.7	14.0	23.3
2	Transmission by Aedes Aegypti mosquito	57.0	95.0	3.0	5.0
3	Aedes Aegypti bites during day time	43.0	71.7	17.0	28.3
4	Characteristic of Aedes Aegypti mosquito	39.0	65.0	21.0	35.0
5	Aedes Aegypti habitat	47.0	78.3	13.0	21.7
6	Aedes Aegypti breeding place	29.0	48.3	31.0	51.7
7	Life cycle of Aedes Aegypti	36.0	60.0	24.0	40.0
8	Significance of water containers as breeding place for Aedes Aegypti	57.0	95.0	3.0	5.0
9	Aedes Aegypti mosquitoes feeding	54.0	90.0	6.0	100.0
10	Dengue fever epidemic often increases during the rainy season	49.0	81.7	11.0	18.3
11	Dengue fever, found mostly in 5-9 years age group	42.0	70.0	18.0	30.0
12	Sign and symptoms of dengue fever	43.0	71.7	17.0	28.3
13	Treatment of dengue fever patient	55.0	91.7	5.0	8.3
14	Analgesic drug for use in dengue fever	35.0	58.3	25.0	41.7
15	Simplest way to prevent dengue fever	32.0	53.3	28.0	46.7
16	The most effective dengue prevention is Elimination of mosquito breeding sites and protection from mosquito biting	56.0	93.3	4.0	6.7
17	People responsible for elimination of Mosquitoes breeding places	57.0	95.0	3.0	5.0
18	Method of eliminating Aedes larvae	53.0	88.3	7.0	11.7
19	The efficient period of abate sand	39.0	65.0	21.0	35.0
20	Measures to be taken during fogging insecticides inside the house	50.0	83.3	10.0	16.7

The table above indicates that more than 80% of the respondents are aware of:

(a) How to eliminate or destroy Aedes A. mosquito larvae.

(b) Dengue haemorrhagic fever is often epidemic during the rainy season.

(c) Measure to be taken during house fogging by public health staff.

(d) The basic treatment for DHF.

(e) The most effective methods in DHF prevention and control.

(f) Feeding sources of female Aedes A. mosquitoes.

(g) The potential breeding places of Aedes A. mosquitoes.

(h) The transmission of dengue fever by Aedes A. mosquitoes.

(i) The responsibility of people in the elimination of Aedes A. mosquito breeding places.

(j) Transmission of DF/DHF by Aedes A. mosquito.

(k) The potential breeding places of Aedes A. mosquito.

Of the respondents 60-79.99% understand the cause of dengue fever; that Aedes A. mosquito is a day time biting mosquito; the characteristics of the Aedes A. mosquito, their breeding places and their life cycle. They also understand that DHF is most common in children 5-9 year of ages, the signs and symptoms of dengue fever and the efficiency of abate sand.

Less than 60% are aware of the specified analgesic drug used for dengue patients, the protection from mosquito bites as the simplest way to prevent dengue fever and the Aedes A. mosquitoes breeding places.

Table 4.3   Classification of respondents' level of knowledge.

Level of knowledge	Number	Percentage
High (> X + S.D)	10	16.7
Moderate (= X ± S.D)	37	61.7
Low (⁻ X – S.D)	13	21.7
Total	60	100

X = 15.48, S.D = 3.40

From table above: True answer: one score.

　　　　　　　　　False answer: zero score.

　　　　　　　　　Maximum total score: 20

Of the respondents 16.7% had a high level of knowledge, whereas most of the respondents (61.7%) had a moderate level and 21.7% of them showed a low level. The mean knowledge of the respondents was 15.48; the standard deviation was 3.40.

Table 4.4   Reponses on the attitude statement questionnaire

Range	Statement	Agree		Uncertain		disagree	
		Number	Percentage	Number	Percentage	Number	Percentage
1	A strong person will not get dengue fever.	16.0	26.7	26.0	43.3	18.0	30.0*
2	To kill the larvae is more difficult than to kill the adult mosquito	25.0	41.7	12.0	20.0	23.0	38.3*
3	A patient with dengue haemorrhagic fever can recover himself: treatment is not necessary.	10.0	16.7	9.0	15.0	41.0	68.3*
4	DF/DHF is a severe and dangerous disease. if no immediate treatment is given.	50.0	83.3*	6.0	10.0	4.0	6.7
5	Dengue fever should be under surveillance in order to prevent an epidemic in the village.	51.0	85*	8.0	13.3	1.0	1.7
6	Dengue fever is not a preventable disease.	21.0	35.0	11.0	18.3	28.0	46.7*
7	Disposal of unused cans. coconut shells and rubber tyres to prevent mosquito breeding places is an easy preventive measure.	51.0	85.0*	8.0	13.3	1.0	1.7
8	Release larvivorous fish into water containers in order to kill larvae.	34.0	56.7*	12.0	20.0	14.0	23.3
9	The elimination of Aedes A. mosquitoes is every person's duty.	54.0	90.0*	5.0	8.3	1.0	1.7
10	The elimination of Aedes A. mosquito breeding places is an expensive activity.	15.0	25.0	25.0	28.3	28.0	46.7
11	Dengue fever prevention is the responsibility of public health staff only.	14.0	23.3	13.0	21.7	33.0	55.0*
12	Thermal fogging is not helpful; the smoke alone cannot eliminate the mosquitoes.	27.0	45.0	17.0	28.3	16.0	26.7*
13	Only the mosquito carrying the dengue virus can transmit dengue fever to other people.	42.0	70.0*	14.0	23.3	4.0	6.7
14	People should put abate sand in the water jar in order to eliminate the Aedes A. mosquito larvae.	50.0	83.3*			10.0	16.7

Note :   An Asterisk denotes correct response.

The findings in table 4.4. show the attitude of the respondents related to dengue fever. Of the respondents 83.3% agree with "dengue fever is a severe and dangerous disease if no immediately treatment is given"; whereas 85% of the respondents agree with the statement that dengue fever should be under surveillance in order to prevent an epidemic in the village. 90% of the women also agree with the statement "the elimination of Aedes A. mosquitoes is every person's duty".

However 68.3% of respondents disagreed with the statement "dengue haemorrhagic fever can be self recovery; treatment is not necessary" and 55.5% disagreed to "dengue fever prevention is the responsibility of public health staff only". Of the respondents 43.3% was uncertain about the statement "a strong person will not get dengue fever".

Table 4.5   Classification of respondents' attitude.

Level of attitude	Number	Percentage
Good (> X + S.D)	8	13.3
Moderate (= X ± S.D)	37	61.7
Low (< X – S.D)	15	25
Total	60	100.0

X = 31.333, S.D = 4.12, Min = 23.00, Max = 39.0

Scoring in table 4.5. is as follows:

Three scores for the answer "agree" in the positive question, 2 scores for "uncertain" and 1 score for "disagree".

One score for "agree" in the negative question, 2 scores for "uncertain" and 3 scores for "disagree".

The results in table 4.5. indicate that a majority of respondents (61.7%) have moderate attitude level; 13.3% have good attitude level and 25% have a low attitude level. Mean score is 31.33 from a total of 42 scores and standard deviation is 4.12 scores.

Table 4.6   **Responses on practice statement questionnaire.**

Range	Activity regarding to dengue Prevention and control	Often		Sometime		Never	
		Number	%	Number	%	Number	%
1	You put abate sand in the water containers inside the house every 3 months?	37.0	61.7	18.0	30.0	5.0	8.3
2	You empty unused containers at home every 7 days?	35.0	58.3	21.0	35.0*	4.0	6.7
3	You completely cover water containers at home?	39.0	65.0	19.0	31.7	2.0	3.3
4	You get rid of larvae in the water of ant traps by putting salt, soap powder, oil or abate sand in it?	36.0	60.0	13.0	21.7	11.0	18.3
5	You put larvivorous fish in the water containers inside the house?	16.0	26.7	8.0	13.3	36.0	60.0*
6	You change the water in the flower vases inside the house every 7 days?	23.0	38.3	10.0	16.7	27.0	46.0
7	Do you get rid of rubbish, Aedes aegypti mosquito breeding sites in- and outside your house?	45.0	75.0*	12.0	20.0	3.0	5.0
8	Do you use insecticide spraying or burning mosquito coils inside the house?	32.0	53.3	18.0	30.0	10.0	16.7
9	Your house is built with mosquito screens and/or do you put the children to sleep under a mosquito net in the day time?	33.0	55.0	13.0	21.7	14.0	23.3
10	Do you use to join the dengue fever public awareness campaign?	27.0	45.0	14.0	23.3	19.0	31.7
11	Do you use to join in the elimination of mosquito breeding sites campaign?	30.0	50.0	17.0	28.3	13.0	21.7
12	Do you use to persuade your neighbour to participate in dengue prevention and control in the village?	26.0	43.3	19.0	31.7	15.0	25.0
13	Do you have doors and windows closed; food, drinking- and utility water covered and people and animals removed from your house while the public health staff is fogging your house?	49.0	81.7	10.0	16.7	1.0	1.7
14	Do you change the water in the dishes under the plant pots every 7 days?	32.0	53.3	15.0	25.0	13.0	21.7

The results of table 4.6 show that 60% of respondents never release larvivorousfish into the water containers at home. Emptying non-used containers at home every 7 days, is said to be done sometimes by 35.5% of respondents. Closing all doors and windows and covering water containers during thermal fogging inside their houses is done by 81.7 percents of the respondents, whereas 75% often eliminate the mosquito breeding places in and around their house.

Table 4.7   Level of practice or participation in prevention and control of dengue fever

Level	Number	Percentage
Good (> X + S.D)	11	18.3
Moderate (= X ± S.D)	40	66.7
Low (< X -- S.D)	9	15.0
Total	60	100

$X = 32.78$, S.D = 5.89, Min = 19, Max = 42

Of the respondents 66.7% were conducting a moderate level of practice in dengue prevention and control, while 18.3% were good and 15% were practising a low level of participation. The mean score was 32.78. while the standard deviation was 5.89 (Total score = 42 scores).

Key informant interviews findings:

The key informants interview was done on January 29, 2001 at Koksaad village, Prasat district, Surin

The researcher interviewed the deputy chairlady of the women association in this village. The deputy chairlady was 42 years old. Her children never had dengue fever. Her house, which looked clean and tidy, has 2 floors and is made of wood.

Around the house 4 water containers with covers were found. She stated that in general, the cause of illness in children in this village were common cold and diarrhea. However during the last year there were 5 dengue cases in the village. The children were admitted at the hospital in town. None of the children died. She knew about dengue fever from, the media, such as T.V. and radio, but also from the public health staff. She also stated that dengue fever is caused by infected mosquitoes, which breed in water containers in and around the houses. At her house she put abate in the water containers and always covered the water containers, while taking care of cleaning in and around the house. In her opinion, the best way to prevent dengue fever it is to prevent being bitten by mosquitoes and eliminate their breeding sites.

4.4.3 Result of larval density survey in Koksaad village

Number of houses inspected	=	60	houses
Number of houses infested	=	49	houses
Number of containers inspected	=	439	containers
Number of positive containers	=	109	containers

1. House Index (HI)   =   Percentage of houses infested with larval of pupae

       = $\dfrac{\text{Number of houses infested}}{\text{Number of houses inspected}} \times 100$

       = $\dfrac{49}{60} \times 100$ =   81.6

2. Container Index (CI)   = $\dfrac{\text{Number of positive containers}}{\text{Number of containers inspected}} \times 100$

       = $\dfrac{109}{439} \times 100$ =   24.8

3. Breteau Index (BI)   = $\dfrac{\text{Number of positive containers}}{\text{Number of houses inspected}} \times 100$

       = $\dfrac{109}{60} \times 100$ =   181.6

From the above results (HI = 81.6, BI = 181.6 and CI = 24.8) it can be concluded that the villagers are at high risk to have dengue fever.

4.5   Lesson Learned and Limitations Experienced.

The lesson learned from the data exercise:

1. During the interviews in which the information from the target group was obtained it occurred in some homes that the women, who are responsible for the homework, were not at home. Since other women of the household were, the interviewer did not receive the necessary information from the right person.

2. The interview questionnaire in this study was too long and required too many details. This created sometimes some confusion with respondents. The interviewer needed to explain and focus on the important issues. The interviewer could therefore not always stick to the time limit.

3. During the interviews, the interviewer had to deal with other relatives interfering in answering the questionnaire. which required the need to have some knowledge of communication techniques.

4. The team conducting the larval density survey was the same as the one doing the interviews. It therefore took more time to finish in each household. In the future two teams will conduct the larval density survey and the interviews separately, in order to improve the quality and to safe time

4.6   Discussion and Recommendations.

The purpose of this data exercise study is to obtain information regarding dengue fever, to assess the K.A.P. (Knowledge, Attitude and Practice) in a group of women between the age of 15-60 years and to assess the larval density in their houses. The results from the pre-test or baseline data will be use to prepare the participatory learning workshop

The resulted from the baseline data indicated that:

1) Most of the women or the majority have adequate or moderate knowledge about the various aspects of dengue fever such as knowledge about the cause of dengue fever, transmission, signs and symptoms of DF, Aedes mosquitoes breeding places, Aedes mosquitoes feeding, etc.

2) Most of women have the right or a good attitude towards dengue fever. There is general agreement with the statement that dengue fever is a dangerous disease

without immediate treatment. Concerning the clearing of non-used cans, coconut shells and rubber tyres to prevent mosquito's from breeding, most of the women indicated this to be an easy matter, although most of them agreed the statement "to kill the larvae is more difficult, than to kill the adults mosquitoes". This indicated that they agreed with source reduction or elimination of the larvae at their houses only when an epidemic has occurred in their community, when the government started an anti-dengue fever campaign or when the public health dept. encouraged them to do so. Hence this attitude could be the obstacle in the prevention and control of dengue fever

3) Regarding activities or practices related to dengue prevention and control, the majority of the women answered that they often do cover water containers; empty unused containers; put abate sand in water containers or get rid of rubbish and thus eliminate mosquito breeding places both in- and outside their houses. However few women did make use of lavivorous fish in the water containers

The findings from larval density survey showed a BI of 181.6 and a HI of 81.6 this could be interpreted as a high risk having dengue fever in the community.

Comparison of the results mentioned above with those of the baseline data however showed conflicting results, since it could be expected that the indicators of the larval density survey to be lower in the event of an increased KAP.

The following conclusion is drawn from these results:

1) The women do have sufficient knowledge about the prevention control of dengue fever, but have not changed their behaviour (low practice or low participation in dengue fever prevention/control).

2) Although the women in the group have been answering, in part 4 of the questionnaire (activities related to the prevention of dengue fever), that they often perform many activities to prevent dengue fever, this is being contradicted by the result of the larvae density survey.

It is therefore recommended that the further study should focus on how to motivate and encourage the women to change their behaviour in order to make the program more successful and increase the sustainability.