

## CHAPTER IV

### RESULTS

According to the evaluation of family health leader development project of Na Khao Sia Sub-district, Na Yong District, Trang Province, the results can be presented in terms of the evaluation framework outlined in chapter 3.

#### 4.1 Input

##### 4.1.1 Man

- (1) There were four sub-district public health officers reporting to the person responsible for Village Number 4, that is, Mrs. Thida Sankiatkul, 38 years old, who was working as public health level 6. She graduated from Sukhothai Thammathirat University obtaining Bachelor's Degree of Science (Public Health). Since then, she has been working for the government for 18 years and has been responsible for general public health services (currently called "resident health work") for 10 years and has taken care of the family health leader development project of Village 4, Na Khao Sia Sub-district, Na Yong District, Trang Province. When considering the potential of the responsible public health officer for the project, it was found that she could implement and achieve the project's objectives. In addition, she had sufficient knowledge and ability for run the project. Although the project could

not be operated by only one person, a team could be established by requesting the cooperation of public health officers and community.

- (2) There were 17 village public health volunteers. In details, 88.24% of volunteers were female; 35.29% were 30 – 39 years old and 40–49 years old; 100% were married; 76.48% were farmers; 58.82% graduated from primary school; 29.41% had income less than 5,000 Baht; 29.41% were positioning as development volunteer female group and housewife group; 88.24% received news and information, in terms of, health care from public health officers, television and documents / brochures; 29.42% were responsible for 12 households; 41.18% has been working as public health volunteer for 5-9 years as shown in Table 4.1.

**Table 4.1:** General Information and Personal Characteristics of Village Public Health Volunteers

<b>General Information and Personal Characteristics</b>	<b>Quantity</b>	<b>Percentage (%)</b>
<b>Sex (n = 17)</b>		
- Male	2	11.76
- Female	15	88.24
<b>Age (n = 17)</b>		
- 30 – 39 years old	6	35.29
- 40 – 49 years old	6	35.29
- Over 50 years old	5	29.42
<b>Marital Status (n = 17)</b>		
- Married	17	100
<b>Main Occupation (n = 17)</b>		
- Farming and Agriculture	13	76.48
- Merchant	2	11.76
- Employee	2	11.76
<b>Education (n = 17)</b>		
- Primary	10	58.82
- High Primary	3	17.65
- Secondary	3	17.65
- Diploma	1	5.88
<b>Average Income of Family (n = 17)</b>		
- Less than 5,000 Baht	5	29.41
- 5,000 – 5,999 Baht	2	11.76
- 6,000 – 6,999 Baht	4	23.53
- 7,000 – 7,999 Baht	2	11.76
- 8,000 – 8,999 Baht	1	5.89
- Over 10,000 Baht	3	17.65

**Table 4.1:** (Cont.) General Information and Personal Characteristics of Village Public Health Volunteers

<b>General Information and Personal Characteristics</b>	<b>Quantity</b>	<b>Percentage (%)</b>
Positioning in Village (More than one answer is available)		
- Development Volunteer Female Group	5	29.41
- Housewife Group	5	29.41
- Village Committee	1	5.88
- Funding Committee	1	5.88
- Village Bank Committee	1	5.88
Sources of Knowledge / News / Information in terms of Health Care (More than one answer is available)		
- Public Health Officers	15	88.26
- Documents / Brochures	15	88.24
- Television	15	88.24
- Village Headman / Village Committee / SAO.	12	70.59
- Discussion with Neighbors	11	64.71
- Radio	11	64.71
- Public Health Volunteers	11	64.71
- Village News Tower	10	58.82
- Newspapers	5	29.41
- Teachers	2	11.76
- Center of CCFPH	2	11.76

**Table 4.1:** (Cont.) General Information and Personal Characteristics of Village Public Health Volunteers

<b>General Information and Personal Characteristics</b>	<b>Quantity</b>	<b>Percentage (%)</b>
Quantity of Responsible Households (n = 17)		
- 9 Households	1	5.88
- 11 Households	4	23.53
- 12 Households	5	29.42
- 15 Households	4	23.53
- 17 Households	1	5.88
- 18 Households	2	11.77
Period of Being PHV. (n = 17)		
- Less than 5 years	4	23.53
- 5 – 9 years	7	41.18
- 10 – 14 years	3	17.65
- 15 – 19 years	2	11.76
- Over 20 years	1	5.88

(3) Sample Group consisted of 243 persons working as family health leaders and family health care takers (as of December 2004). In details, 58.44% were female; 27.16% were 40 - 49 years old; 72.84% were married; 36.68% were gardeners; 50.62% graduated from primary school; 49.79% had income less than 5,000 Baht; 60.49% had 3-5 family members; 47.33% had less than three living children; 5.35 were positioning in the village as public health volunteer whereas 86.01% did not have any position in the village. In terms of training provided to family health leaders in 1998, 21.81% were trained, whereas, 78.19% were not trained; 66.67% received news and information, in terms of, health care from watching television; and 90.95% caught a cold in the previous six months as shown in Table 4.2.

**Table 4.2:** General Information and Personal Characteristics of Sample Group

<b>General Information and Personal Characteristics</b>	<b>Quantity</b>	<b>Percentage (%)</b>
<b>Sex (n = 243)</b>		
- Male	101	41.56
- Female	142	58.44
<b>Age (n = 243)</b>		
- 20 – 29 years old	19	7.82
- 30 – 39 years old	54	22.22
- 40 – 49 years old	66	27.16
- 50 – 59 years old	57	23.46
- Over 60 years old	47	19.34
<b>(<math>\bar{X}</math> = 48.05, SD.= 13.77, Max = 86, Min = 20)</b>		
<b>Marital Status (n = 243)</b>		
- Single	9	3.70
- Married	177	72.84
- Widowed	49	20.16
- Divorced / Separated	8	3.29
<b>Main Occupation (n = 243)</b>		
- Paddy Farming, Gardening, Farming	94	38.68
- Employee	80	32.92
- Merchant	38	15.64
- Housewife	19	7.82
- Government Service	8	3.29
- Animal Raising	4	1.65

**Table 4.2:** (Cont.) General Information and Personal Characteristics of Sample Group

<b>General Information and Personal Characteristics</b>	<b>Quantity</b>	<b>Percentage (%)</b>
<b>Educational Level (n = 243)</b>		
- Non-Educated	14	5.76
- Primary	123	50.62
- High Primary	48	19.75
- Secondary	20	2.23
- High School	15	6.17
- Diploma, Certificate	14	5.76
- Bachelor's Degree or Higher	9	3.70
<b>Average Income of Family (n = 243)</b>		
- Less than 5,000 Baht	122	50.21
- 5,000 – 5,999 Baht	48	19.75
- 6,000 – 6,999 Baht	24	9.88
- 7,000 – 7,999 Baht	12	4.94
- 8,000 – 8,999 Baht	10	4.12
- 9,000 – 9,999 Baht	5	2.47
- Over 10,000 Baht	21	8.64
$(\bar{X} = 5,176.42, SD. = 3,887.85, \text{Max} = 30,000, \text{Min} = 1,500)$		
<b>Quantity of Family Members (n = 243)</b>		
- Less than 3 persons	36	14.81
- 3 – 5 persons	147	60.49
- 6 – 8 persons	49	20.16
- Over 9 persons	11	4.53
$(\bar{X} = 4.47, SD. = 2.17, \text{Max} = 13, \text{Min} = 1)$		
<b>Quantity of Living Children (n = 243)</b>		
- Less than 3 children	115	47.33
- 3 – 5 children	101	41.56
- 6 – 8 children	22	9.05
- Over 9 children	5	2.06
$(\bar{X} = 3.01, SD. = 1.91, \text{Max} = 9, \text{Min} = 0)$		

**Table 4.2:** (Cont.) General Information and Personal Characteristics of Sample Group

<b>General Information and Personal Characteristics</b>	<b>Quantity</b>	<b>Percentage (%)</b>
<b>Positioning in Village (n = 243)</b>		
- Public Health Volunteer	15	6.96
- Housewife Group	11	4.53
- Village Committee	10	4.12
- Development Volunteer Female Group	7	2.88
- Non-positioning	209	86.01
<b>Reception of Training / Knowledge in the Project (n = 243)</b>		
- Received in 1998	53	21.81
- Not Received	190	78.19
<b>Sources of Knowledge / News / Information in terms of Health Care (More than one answer is available)</b>		
- Television	162	66.67
- Discussion with Neighbors	121	49.79
- Village News Tower	120	49.38
- Public Health Officers	114	46.91
- Public Health Volunteers	108	44.44
- Radio	77	31.69
- Village Headman / Village Committee / SAO.	74	30.45
- Newspapers	68	27.98
- Documents / Brochures	54	22.22
- Teachers	30	12.35
- Center of CCFPH	11	4.53
<b>Sickness in Previous Six Months (More than one answer is available)</b>		
- Cold	221	90.95
- Diarrhea	40	16.46
- Hypertension	31	12.76
- Diabetes	4	1.65



#### **4.1.2 Money**

In 1998, the Ministry of Public Health established the project supporting budgets to all provincial public health offices. As the budgets were allocated and distributed to all districts, the public health center had received the pilot budget of 3,000 Baht from the Fundamental Public Health Division, Public Health Office of Trang Province. In 1999, there was continuous training and each village received 7,500 Baht from the Public health Division, so the project was thoroughly operated in the village. Presently, each village is still supported and has received the budget of 7,500 Baht from the Public Health Division. However, this amount of budget is not sufficient to operate the project anymore because this budget must be allocated for all public health problems of the village. Although the public health center has received the budget to operate other projects, such as, Prevention and Control of Hemorrhagic Fever Project, Prevention of Diarrhea Project, Royal Glory Project, Aged Project, Non-Infectious Disease Project, such as, diabetes and hypertension including Uterus Cancer Examination Project, this budget has supported only these projects and emphasized on sub-district activities. Consequently, the family health leaders project lacked sufficient funds for a continuous development.

#### **4.1.3 Material**

##### **(1) Lecturers of Training**

Two trainings were supported by the main lecturers from the local working unit, that is, from three public health officers of public health center. As most contents were dealt with health care of family, the potential of local public health officers could provide such knowledge to family health leaders.

## (2) Supporting Documents of Training

As the documents were brochures with contents produced and considered by the public health officers of public health center, the contents were consistent with local problems. Some contents, however, were supported by the provincial public health office, such as, documents of haemorrhagic fever and diarrhea. All documentations were aimed to be used as the manual for family health leaders.

## (3) Exploitation of Audio Visual Aids

Videos were used to support the lecture of the prevention and control of Hemorrhagic Fever. All videos were supported from the Public Health Division, Public Health Office of Trang Province. Other instruments belonged to the public health center including a television and a video player.

## (4) Contents

Contents had to be important and applicable to the local problems. Contents could be divided according to the guidelines of the project as follows:

- Knowledge of Local Diseases, such as, AIDS, diabetes, Hemorrhagic Fever, diarrhea and hypertension, in terms of, disease prevention, symptom observation, primary sickness care and dangerous intervened symptom observation before bringing a patient to public health center or hospital.
- Knowledge of Primary Care, such as, cold, in terms of, disease prevention, health care when catching a cold, primary sickness care and

dangerous intervened symptom observation before bringing a patient to public health center or hospital.

- Fundamental Public Health Services included family planning, immunization for newborn to 5-year-old children, care of pregnant women and nutrition of newborn to 5-year-old children, in terms of, receiving services based on the appointment or acknowledgement of PHVs, so that, the public health officers could take care and provide the services steps by steps in order to prevent further complications, which might occur.
  - Health Insurance: In 1998, there was a promotion encouraging people to buy a health insurance card (500 Baht-Card), which covered all health care and treatment of family members. Thus, there were public relations about this health insurance to all families to buy such a card. Later, in 2004, there was a survey of villagers in order to provide them a health insurance card according to the policy of 100% of national health insurance.
- (5) Places of Training: In 1998 and 1999, the village hall was used as the Center of Community Fundamental Public Health (CCFPH). Such the selection was considered by the community leaders and public health volunteers because the village hall was located at the center of village with the convenient communication for all family health leaders to participate in a meeting. Accordingly, there were two trainings of the

project, that is, in 1998 taking only one day and in 1999 taking only one day as well.

#### **4.1.4 Management**

There were five levels of administrative management in operating the project, that is:

- (1) Provincial Level: There was a meeting to inform the project implementation to all 23 responsible persons of the district level, hospital and municipality. The provincial level established the extensive framework of the project according to the guideline of the Fundamental Public Health Office, Ministry of Public Health, so that all district could consider and operate the project with the local circumstance.
- (2) District Level: There was a meeting to inform 8 responsible persons of all public health centers in Na Yong District. Additionally, there was a mutual consideration, in terms of, project approval agreement. However, each public health center had to consider about the methods and styles. In terms of support in the district level, there was the coordination and cooperation according to the needs of each local area, whereas, the public health officers provided knowledge and understanding of the project operation and established the activities, which should be performed in the village.
- (3) Sub - district Level: There was a meeting to inform the details of the project to 3 responsible public health officers. In addition, there was a

discussion, in terms of, provincial needs, objectives, activities, scope of project operation and the selection of target village of public health center, namely, Village Number 4 was selected as the pilot village of 1998.

- (4) Village Level: There was an invitation to a village headman, village head man assistant and all public health volunteers to participate in the meeting in order to be informed about the project and considered the selection of family health leaders, who would be trained in the project. In addition, there was a consideration in terms of all places and operations. According to the meeting, PHVs had to inform the villagers to participate and be trained as a family health leader. Accordingly, it was found that the community had a significant participation in the project operation in the village level.
- (5) Household Level: Public health volunteers would visit target households in order to discuss and persuade the villagers to participate in the project according to their interest, willingness and possibility of being trained. Accordingly, there was cooperation from family members because they encouraged their members to be trained in the project on the appointed date. In 1998, there were 30 family health leaders participating in the training and 243 households were trained in 1999.

## 4.2 Process

### 4.2.1 The Selection Method of Family Health Leaders

In terms of selection method of family health leaders, the persons considering this selection consisted of public health volunteers, public health officers and the community leaders. Accordingly, the researcher conducted a focus group discussion that included five public health volunteers, two community leaders, that is, village headman and village headman assistant, in order to, share opinions in terms of selection process of family health leaders. The discussion could be summarized as follows:

- (1) In terms of the establishment of qualifications, the family health leaders had to be educated or literate. In addition, they should be male or female ages 30-40 years old. It would be better if they were a family leader because they could pass on knowledge and encourage their family members to practice as they were trained. The family health leaders should be interested, ready, responsible, flexible and devoted. Additionally, they should have spare time to cooperate with the community and would be willing to participate and help the village.
- (2) In terms of the selection of family health leaders, who would be trained, the public health officers invited PHVs and community leaders to participate in the meeting to be informed about the project and the consideration of selection. Accordingly, PHVs would visit the village and persuade the qualified persons to join the project willingly. If such qualified persons were interested and had time, they would cooperate with PHVs, whereas, some villagers were supported by the family members. This depended on each family's circumstances. If there were

no interested villagers, the village headman would announce via the news tower to encourage the family representatives to be trained. Finally, if any family had problems, the officers would visit and persuade them again. As a result, most families would give a hand but some families were still not interested.

#### **4.2.2 There were two ways of training as detailed below:**

- (1) Group Training was used in the first training, where there were 30 participants and, in the second training, there were 243 family health leaders, which covered all villages. During trainings, lectures in terms of disease prevention, health care, and intervened disease observation were used. In addition, there were demonstrations of home-made salt / mineral solvent production and body cleaning for sick children. The family health leaders practiced home-made salt / mineral solvent production and body cleaning for sick children. Moreover, there was a discussion and opinion sharing. The methods of training depended on contents and knowledge provided for the family health leaders. However, variety of training methods could attract the family health leaders. Thus, the lecturers employed mixed methods, in order, to reach most villagers and encourage / support the continuous knowledge development.
- (2) Individual Training was exploited when there was a visit to each household. In general, the public health volunteers usually paid importance to the disease prevention giving suggestions according to

each health problem of the families. However, if the public health volunteers were not sure or could not give any advice, they would discuss the problems with the public health officers or would suggest the villagers to be advised at the public health center. So, this method was dealt with a discussion between the family health leaders and family members which led to close personal tie.

**4.2.3 Knowledge follow-up, supervision and visits after training of public health volunteers and public health officers consisted of two parts:**

- (1) In terms of the follow-up of the public health officers since its operation in 1998, there was a plan to follow-up the family health leaders once per month. According to the interviews of the public health officers and public health volunteers, the first follow-up could be conducted according to the plan, namely, there were 3-4 visits per year. However, the follow-up could not be conducted as usual because of time constraint. The health staff who were responsible in following up the public health officers were busy with other health projects.
- (2) The follow-up of public health volunteer was usually conducted once a week. If there were additional activities, such as, weekly common mosquito investigation, the number of visits would be increased. In addition, there were discussions and practical suggestions to the public health leaders as well.



Moreover, it was found that activities would be conducted once a month in the village, such as, monthly meetings of the village, exercise programs, control of Hemorrhagic Fever project, control of non-infectious disease project concerned with diabetes and hypertension, uterus cancer examination project and health care for old person project. Accordingly, all project activities gave an opportunity for regular meetings among family health leaders, public health volunteers and public health officers.

#### **4.2.4 Health Care Procedure of Family Health Leaders**

When there sickness, it was found that the family health leaders, who had been already trained, could provide knowledge and practical suggestions to the family members. When the family members had health problems, they would give practical guidelines. For instance, if a family member got sick and had fever, they would wipe the patient's body to reduce the fever. In addition, the family health leaders had knowledge about the correct usage of medications, i.e., dose, length of time, and etc. If the patient was not better after taking medicine, they would bring such patient to the public health center officers or doctors. The family health leaders also knew which symptom of sickness could be treated by themselves or doctors. Thus, the family health leaders could provide primary care for their family members, such as, use of common medicine to reduce illness. This method could reduce a number of patients receiving services at the public health center and hospital.

## 4.3 Output

This evaluation study considered knowledge to be the main output of the project. Therefore, knowledge were measured as knowledge level, in terms of, various subjects. In addition, the relationship between personal factors and knowledge were also determined.

### 4.3.1 Outcomes of Knowledge Evaluation

The knowledge evaluation of the sample group could be divided into five categories, that is, (1) Overall conclusion of knowledge outcomes, (2) Knowledge about local diseases; (3) Primary sickness care; (4) Fundamental public health services; and (5) Health insurance. The study outcomes for (2), (3), (4) and (5) consisted of quantitative and qualitative results with a conclusion that integrated qualitative and quantitative results. The results are as follows:

#### 4.3.1.1 Overall Conclusion of Knowledge Outcomes

- At the end of the training, the family health leaders had to gain 80% of correct knowledge, that is, the family health leaders having high level of knowledge had to answer 80% of the questions correctly (26-32 marks). The researcher used the lowest score as the base of criteria in establishing medium and low levels of knowledge. Thus, anyone getting 60 – 79% of knowledge evaluation (19 – 25 marks) had a medium level of knowledge, whereas, a person getting less than 60% of the evaluation (1 – 18 marks) had a low level of knowledge.

In conclusion, the 105 persons (43.21%) of the sample group had a high level of knowledge; 115 persons (47.32%) had a medium level of knowledge and 23 persons (9.47%) had a low level of knowledge, respectively as shown in Table 4.3.

**Table 4.3:** Knowledge Level of Sample Group

Knowledge Level (Marks)	Quantity	Percentage (%)
- High (26 – 32 marks)	105	43.21
- Medium (19 – 25 marks)	115	47.32
- Low (1 – 18 marks)	23	9.47
- $\bar{X}$	24.20	
- SD	3.3	
- Max	30	
- Min	11	

#### 4.3.1.2 Outcomes of Local Diseases

The evaluation outcomes of local disease of sample group included (1) AIDS (2) Hemorrhagic (3) Diarrhea (4) Diabetes and (5) Hypertension. Accordingly, the outcomes consisted of quantitative and qualitative aspects including the conclusion, as follows:

##### (1) AIDS

- Quantitative Study Outcomes

The sample group had knowledge of AIDS, in terms of, caring methods for AIDS patients. In details, 84.36% could answer questions correctly while 77.37% could answer about the communication and control of AIDS. When evaluating the knowledge of AIDS based on the questionnaires, it was found that, the sample

group had high level of knowledge because 80.86% could answer the questions of AIDS correctly as shown in Table 4.4.

**Table 4.4:** Knowledge of AIDS of Sample Group

<b>Question (s)</b>	<b>Quantity of Correct Answers</b>	<b>Percentage of Questionnaire Answerers</b>
1. Caring methods for AIDS patients	205	84.36
2. Communication and Symptoms of AIDS patients	188	77.37
<b>Total</b>		<b>80.86</b>

- Qualitative Study Outcomes

In terms of application knowledge of the sample group, who had AIDS family member, it was found that there was no AIDS patient in the study area and neighborhood. Thus, the data could not be collected. However, during the visits, the researcher interviewed the sample group about AIDS knowledge, it was found that the sample group could answer the questions correctly in terms of AIDS communication; they could explain that AIDS could be communicated through sexual intercourse without using condoms, sharing needles among drug addicts and the mother-to-baby infection. When a mother was infected by AIDS while getting pregnant, such a baby had an opportunity to be infected. When infected, the body would be weak and could be easily infected by other diseases. Some patients would have white blemish or wounds on tongue and skin. Their body would be thinner and could be easily infected by tuberculosis. In terms of AIDS patient care in the community, all villagers in the sample group usually answered in the same direction, that is, they should not

stigmatize these patients and had to take care and help them. They should not add aggravation to these patients.

- Conclusion of Study Outcomes

The knowledge level of AIDS could be concluded as follows: The sample group had a good knowledge of AIDS in terms of prevention, communication and symptoms of patients. According to the questionnaires and interviews, the sample group could answer the questions correctly, which might be assumed that the family leaders had knowledge about AIDS. In terms of patient care of the sample group, the family health leaders had good level of knowledge and could answer all questions correctly. Thus, we would see that in the previous five years, there were many projects and activities providing knowledge in terms of AIDS prevention in the village regularly and continuously. As there were many ways to provide knowledge about AIDS, the sample group had accordingly quite good level of knowledge.

## (2) Hemorrhagic Fever

- Quantitative Study Outcomes

The sample group had knowledge about hemorrhagic fever in terms of intermediate hosts and 97.44% of them could answer the questions correctly; 83.54% could answer the questions correctly in terms of the prevention; 66.29% could answer the questions about major symptoms, whereas 39.51% could answer the questions about patient care. However, the sample group could not answer the questions created by the researcher in order to differentiate the dangerous symptoms of Hemorrhagic Fever from other diseases. For villagers, cold's fever and Hemorrhagic Fever were not

so different; thus it was late to observe that this fever was not cold's fever. Such event could occur because Hemorrhagic Fever was quite rare in the village, so the sample group could not recognize it. As a result, when being evaluated, they had only a medium level of knowledge and 71.82% of them could answer the questions correctly as shown in Table 4.5.

**Table 4.5:** Knowledge of Hemorrhagic Fever of Sample Group

Question (s)	Quantity of Correct Answers	Percentage of Questionnaire Answerers
1. Intermediate hosts of Hemorrhagic Fever	238	97.94
2. Spreading preventive methods of Hemorrhagic Fever	203	83.54
3. Major symptoms of Hemorrhagic Fever	161	66.29
3. Caring methods for hemorrhagic fever patients	96	39.51
<b>Total</b>		<b>71.82</b>

- Qualitative Study Outcomes

Accordingly, the researcher had collected the data of knowledge application in terms of hemorrhagic fever through interviews. According to the information of the public health center, it was found that in 2003, there was a 7-year-old boy suffering from hemorrhagic fever in Village Number 4. This patient was taken care by his mother, who narrated the symptoms of hemorrhagic from the beginning of sickness until her child was better and came home from the hospital. Thus, the researcher could evaluate the knowledge of hemorrhagic fever and the results are as follows:

(2.1) In terms of the primary care when a family member suffering from hemorrhagic fever, the family health leaders would give care according to symptoms. For instance, when the patient had fever, they could correctly wipe a body or provide medicine, such as, Paracetamol to reduce fever. In addition, the family health leader would, periodically, observe the patient's symptoms. When the patient has other symptoms unrelated to cold, there was a discussion to bring the patient to be additionally treated at a clinic, for example. When the symptom was not better, the patient would be brought to the nearest hospital as narrated by a family health leader:

*“My child had had a fever for two days, so I gave him medicines (paracetamol), which my husband bought from a drugstore (Ratchanee Pharmacy) in the village. Then, I had wiped my child's body but his symptom was not better. I discussed this with my husband and brought my child to a clinic on the third day. The doctor examined my child and prescribed three bottles of medicine. After having taken these medicines until the fifth day, I observed that my child's eyes were terribly red and he had a hallucination of ghost at night. I felt very afraid and decided to take him to Na Yong Hospital.”*

(2.2) In terms of hemorrhagic fever prevention in the village, the family health leaders and family members had controlled and prevented from hemorrhagic fever both inside and outside their house according to the suggestions of PHVs. However, there was still no realization of serious control and prevention because they just followed the suggestions of PHVs because of their personal relationships. However, once there was a male patient suffering from hemorrhagic fever, the family

health leaders, having more acknowledged about the danger of hemorrhagic fever, paid much attention to the disease and its prevention with much understanding and realization of danger, which might occur to their family members. In addition, they discussed about the disease prevention with their neighbors, who came to visit them.

*“I had known about hemorrhagic fever from the suggestions of Sister Khai (PHV). At first, I had followed her suggestions without any consideration. However, Sister Khai was very nice and told me everything she knew. Additionally, she asked me to put upside down the containers and add some sand. I followed all of her suggestions. However, after our child was suffered from hemorrhagic fever, I was afraid and my husband paid much attention to the disease. Thus, he cleaned our house and took care of water puddles every week. He answered all questions when someone asked him about this saying that we had to help each another because the disease was very terrible. However, I did not remember well, so I had to ask Sister Khai about the prevention. After our child got sick, my husband attached a mosquito curtain to prevent our child from being bitten by mosquitoes. Thus, I thought that all families had to help each another because there were a lot of mosquitoes flying to all houses. If there was no prevention, we might be bitten as well.”*

After there were some patients in the community suffering from hemorrhagic fever, the villagers paid attention and provided for the prevention as the PHV said:

*“I walked and told all families about the disease prevention. Some families believed but sometimes they did not. It was quite difficult. However, when there was a*



*patient, the villagers were afraid that their children might be sick. I told them that we had to help each another to prevent from this disease. Now, I did not say much about this because all families had realized about it. However, I still went seeing the origins of larvae of common mosquitoes every week. This was a big project and I had to write a report about this. In addition, the doctor gave me some cards for checking and these cards would be sent to the public health center. Moreover, there was a competition of each village nationwide.”*

(2.3) In terms of transferring knowledge to family members after being trained, the family health leaders just transferred contents but they did not tell about the methods. However, there was a practice with the family members as described in the following story:

*“After the training, my husband asked me about the meeting. I just told him that the meeting was about diarrhea, hemorrhagic fever, diabetes etc. I could remember only some contents. I had already known some stories from Sister Khai. However, producing salt water was funny. When my child got sick, I just did so. Sometimes, I wiped his body or gave him medicines. If his symptom was not better, I brought him to the public health center or asked from Sister Khai (PHV) because our houses were near each other.”*

### **Conclusion of Study Outcomes**

The sample group had a good level of hemorrhagic fever in terms of intermediate hosts and the prevention. However, they could not answer the questions

about symptoms clearly because they only knew about high fever and fever reduction but they could not tell about other symptoms. In terms of health care, they had knowledge about fever reduction and dangerous symptom observation. In addition, they could correctly transfer knowledge to other family members, take care and bring a patient to a public health institute.

### (3) Diarrhea

- Quantitative Study Outcomes

The sample group had knowledge about diarrhea, in terms of, primary care when a family member got diarrhea and 93.00% of them could answer the questions correctly; 92.18% could answer the questions correctly, in terms of, the causes of diarrhea; 91.77% could answer the questions about the prevention of diarrhea; 83.95% could correctly answer about the symptoms of a patient with diarrhea, whereas, 78.60% could answer the questions about symptom observation of a patient suffering from diarrhea for bringing such patient to be treated at the public health center or the near hospital. For the overall knowledge evaluation, 87.90% of the sample group had a good level of knowledge because they could answer the questions correctly as shown in Table 4.6.

**Table 4.6:** Knowledge of Diarrhea of Sample Group

<b>Question (s)</b>	<b>Quantity of Correct Answers</b>	<b>Percentage of Questionnaire Answerers</b>
1. Primary aids when a family member has diarrhea	226	93.00
2. Causes of diarrhea	224	92.18
3. Preventive methods of diarrhea	223	91.77
4. Symptoms of patient having diarrhea	204	83.95
5. Symptom observation of a family member having diarrhea for bringing such patient to public health center or nearby hospital	191	78.60
<b>Total</b>		<b>87.90</b>

- Qualitative Study Outcomes

The application knowledge evaluation of the sample group having family members suffering from diarrhea was conducted by interviewing five persons, which could be summarized as follows:

(3.1) In terms of the prevention, the sample group had quite a good knowledge level because they could answer the questions correctly in terms of preventing flies from swarming around the food, eating warm cooked food, warming food before eating, covering cooked food with a net or putting it in a cupboard, washing hands with soap before having meals and after going toilets and eliminating the origins of fly by eliminating the garbage. In addition, the sample group would provide knowledge of prevention to the family health leaders. The adult family members usually had good knowledge of diarrhea, whereas, the primary and secondary students could answer questions rapidly. However, young and old family members could not answer questions correctly or could answer only some questions. Thus, the prevention

of diarrhea for young children would be conducted by parents and a mother usually took care and gave suggestions to children. However, a mother could not take care of their children thoroughly because some children were very naughty and liked sucking dirt in their mouth as the following narration:

*“My child liked picking up and sucking a thing in the mouth. Although I had taken care of food and milk keeping them clean, children could have diarrhea because they liked sucking their thumb in their mouth. Sometimes, I saw this but sometimes I did not know because I had to do other jobs. When giving a sweet, my child picked up by a hand. Although he washed his hands but he would pick the sweet again later.”*

Other mother gave opinion about a belief of children with diarrhea, which did not associate with the prevention as stated below:

*“The prevention of diarrhea for children was quite difficult because we only knew that children had taken some dirt. I encouraged my children to take boiled water and clean food, so they should not have diarrhea. Some ancients said that children had diarrhea because of their body stretch. I agreed with this belief because after my children had diarrhea, they would be taller. However, the symptoms were not so serious as the doctor told but at this age, children usually played and bit a dirt.”*

In terms of the diarrhea prevention, the adults usually had knowledge about the disease prevention from narrations of sample group, television and public health officers.

(3.2) In terms of health care when a family member having diarrhea according to the interviews, it was found that the sample group knew that they had to provide soft food to a patient, such as, boiled rice, soup, and etc, In addition, the family health leaders could make salt water and two leaders could even tell about the mixture method. However, some leaders could not tell about the mixture because they only knew the method but did not make it by themselves saying that water salt could be bought in the village which had a better taste, so a patient preferred drinking commercial oral dehydration solution.

In terms of the prevention of transmission to other family members, they would wash their hands with soap several times when there was a patient at home. In terms of referring patients, all patients had been referred in time to the public health center because these patients were exhausted and would like to stop the excretion, thus they would get a further service at the public health center. The young patients of sample group were promptly taken care and brought to the public health center when displaying some symptoms.

(3.3) In terms of knowledge transfer, the adult family members provided knowledge of diarrhea through warnings rather than a formal instructions. Thus, the old family members were not interested because they lived with other members. When there was a sickness in a family, they would discuss and share some suggestions. The sample group, who took care of diarrhea patients said that:

*“When narrating them, sometimes they believed but sometimes not. However, when they got sick, they would follow the suggestions. Sometimes, they asked for salt water, I bought for them. If their symptom was worse, I would bring them to the public health center.”*

- Conclusion of Study Outcomes

In conclusion, according to the interviews and questionnaires, the sample group had a good knowledge level of diarrhea. They could answer the questions correctly but could not tell all details. When asking them more questions, it turned out that they had knowledge but could not explain some contents. As the knowledge of diarrhea had been provided for several times from various sources of knowledge, the sample group could remember them precisely. In addition, diarrhea had been continuously and usually occurred in the village for a long period, the attention and knowledge were provided especially in summer when PHVs would visit and give knowledge to all families. Moreover, the public health center still provided the prevention campaign of diarrhea in the area regularly.

#### (4) Diabetes

- Quantitative Study Outcomes

The sample group had knowledge about diabetes, in terms of, sickness care and suggestions to family members suffering from diabetes and 92.18% could answer the questions correctly; 83.13% could answer the questions correctly, in terms of, the primary care of diarrhea; 80.25% could answer the questions about the symptoms of diabetes, whereas, 76.545% could correctly answer the questions about

the risk behaviors of diabetes patients. For the overall knowledge evaluation, 83.02% of the sample group had a good level of knowledge because they could answer the questions correctly as shown in Table 4.7.

**Table 4.7:** Knowledge of Diabetes of Sample Group

Question (s)	Quantity of Correct Answers	Percentage of Questionnaire Answerers
1. Caring methods and suggestions for diabetes patients	224	92.18
2. Primary suggestions for a family member getting diabetes	202	83.13
3. Symptoms of diabetes patients	195	80.25
4. Risk behaviors of diabetes patients	186	76.54
<b>Total</b>		<b>83.02</b>

- Qualitative Study Outcomes

The application knowledge evaluation of the sample group having family members suffering from diabetes was conducted by interviewing five households having diabetes family members, which could be summarized as follows:

(4.1) In terms of the promotion of disease prevention, the family health leaders had knowledge of disease prevention from the training. However, there was no knowledge transferred to family members because the family health leaders could not remember all contents. The family health leaders knew that, in terms of, the lookout and search for the at-risk patients, there had to be a urine test in the village and a blood test at the public health center. The sample group had knowledge of health examination of the risk group and supported for the practice, for instance, they would

bring a patient to be examined at the public health center when informed by PHVs. In addition, the patient had to be re-examined when there was a suspect case in the family. The family health leader narrated that:

*“A PHV came and told me that my mother should be provided for a urine test. Thus, I brought my mother to the hall. However, a doctor told me that my mother was fine and did not have any hypertension. Later, my mother was exhausted, then I brought her to the public health center. A doctor suspected that my mother might have diabetes; so the doctor wrote a report to send my mother to have a blood test at Na Yong Hospital. The doctor at Na Yong Hospital told me that my mother had diabetes and suggested about food. The doctor also gave me some documents about diabetes including a manual of diabetes patient care.”*

(4.2) The family members participated in health care. The sample group, which was the family health leaders, would get medicines and had an examination as appointed at the public health center or at the hospital. The sample group, who were housewives, would provide proper food for diabetes patients such as food containing vegetables and protein. Moreover, they would provide available food for diabetes patients, such as, steamed fish but would prohibit the patients to have sweet-taste food, such as, sweets or some sugary fruits like durians and rambutans. In terms of male sample group, they would allow their wives to take care of family members. The sample group, who were patients, had knowledge, in terms of, disease care and could answer the questions about diabetes correctly. However, the practices of patients usually depended on themselves and the way they paid importance to the



disease. However, the realization of danger was still low when considered from the narration of a male patient:

*“My children did not allow me to have sweets. When I was tired, having some sweets after meal could help me work. The doctor did not allow me to smoke cigarettes, thus I smoked nipa leaves instead (nipa leaves mixed, rolled and smoked with tobacco). My children told me that the doctor did not allow me to eat grilled pork and fatty pork leg. However, I ate them because I could chew them. Eating fatty pork was good (because it provided energy). Having diabetes was such that. I felt indifferent. If the doctor appointed, I went to the hospital. If my children gave me medicines, I had them.”*

- Conclusion of Study Outcomes

In conclusion, according to the questionnaires, the sample group had a good knowledge level of diabetes. However, according to the interviews, their knowledge level was medium as they could answer the questions correctly but their answers did not cover all details of diabetes. The sample group usually brought patients to the public health center and would get medicines as appointed. In terms of knowledge provision, the practical knowledge was normally transferred to patients because the sickness care of diabetes would be good if there was cooperation from patients.

### (5) Hypertension

- Quantitative Study Outcomes

The sample group had knowledge about hypertension in terms of primary care to family members suffering from hypertension and 99.59% could answer the questions correctly; 79.84% could answer the questions correctly, in terms of, prevention of the intervened symptoms of patients whereas 69.96% could answer the questions about suggestions to hypertension patients. For the overall knowledge evaluation, 83.13% of the sample group had a high level of knowledge because they could answer the questions correctly as shown in Table 4.8.

**Table 4.8:** Knowledge of Hypertension of Sample Group

<b>Question (s)</b>	<b>Quantity of Correct Answers</b>	<b>Percentage of Questionnaire Answerers</b>
1. Primary care to family members suffering from hypertension	242	99.59
2. Prevention of the intervened symptoms of patients	194	79.84
3. Suggestions to hypertension patients	170	69.96
<b>Total</b>		<b>83.13</b>

- Qualitative Study Outcomes

The application of knowledge evaluation of the sample group having family members suffering from hypertension was conducted by interviewing four households having hypertension family members, which could be summarized as follows:

(5.1) In terms of health promotion, the knowledge would be transferred to family members. The sample group had a good level of knowledge of hypertension and could answer the questions in terms of taking care of hypertension patients, danger of intervened condition of hypertension, the disease prevention through exercise and food selection. According to the narration of PHVs, when there was the project of control and prevention for non-infective diseases (diabetes and hypertension), the knowledge was transferred to the family members in terms of examination. Thus, the sample group had brought their members to get services at the community public health center and the public health center and reminded them to obtain medicines and other services. Additionally, the sample group would take care and inspect the medicine intake of the patients. One patient narrated that:

“At first, I did not think that I had any hypertension. Everything was fine. However, I felt dizzy but I thought that I was anxious. Thus, I took a medicine and got a rest. At that time, PHVs told me to check the pressure but I did not pay any attention to it. However, my children sitting when the PHVs visited me had brought me to a doctor. So, I realized that I had a hypertension. ”

(5.2) In terms of the assistance of health care, the sample group brought the patients to be examined and received medicines at appointed time. Moreover, they would provide proper food according to the health problem of patients. However, in some families, the patients had to take care of this for themselves. Some patients had knowledge and could answer the questions because they received the

suggestions from the doctor when they received medicines continuously as a patient said that:

*“Seeing the doctor as appointed was ok and was not so difficult. However, there was a problem because I had to wait until my children finished their work. Having children was good because we could depend on them when getting sick. My children were trained and would tell me about the trainings. However, I could remember only some details. Sometimes, I asked it from a child of Noi (PHV). If he had any news, he would visit and tell me.”*

- Quantitative Study Outcomes

In conclusion, according to the questionnaires and interviews, the sample group had a high knowledge level of hypertension. The sample group could answer the questions, in terms of, the details of hypertension, especially, in terms of the health promotion through exercise, rest, food and the importance of seeking continuous service. As the sample consisted of patients and patient-care takers, when bringing patients to receive the services, they would receive some suggestions from the public health officers, in terms of, hypertension knowledge, sickness care, continuous practices of patients. Accordingly, the implementation of non-infectious disease control and prevention project in the village searching for the at-risk patients, led to the learning and impact on the knowledge of sample group.

#### 4.3.1.2 Knowledge Outcomes of Primary Sickness Care When Catching a Cold

##### (1) Cold

- Quantitative Study Outcomes

The sample group had knowledge about cold and 90.95% could answer the questions correctly, in terms of, primary sickness care; 88.07% could answer the questions of symptoms; 85.19% could answer the questions correctly in terms of disease observation and separation from other diseases in order to prevent children from possible danger, whereas, 44.44 % could take care of children having a high fever. For this question, the researcher would like to evaluate the knowledge of sample group, in terms of, primary sickness care for children aging below five years old in order to test their promptness evaluation. In addition, 40.33% of the sample group could answer the questions about the causes of cold. For this question, the researcher would like to evaluate the knowledge from the training of sample group, in terms of, the causes of cold. According to the training, a cold was derived from virus and there was no need to take any medicines if there was no intervened condition; the patients could get well if they kept their body warm having sufficient rest and good practices. In terms of primary care to reduce a fever of children, 9.88% could answer the questions correctly. For this question, the researcher had the objective to encourage the sample group to take care of patients properly. For instance, they should allow children to drink lots of water, wiped their body, provided them medicines when the fever was over 39' C and fed them soft food to give energy. For this question, the researcher let the sample group select the false answers. However, the sample group might be confused in answering the questions. Accordingly, their overall knowledge evaluation was quite

low as only 59.81% of the sample group could answer the questions correctly as shown in Table 4.9.

**Table 4.9:** Knowledge of Cold of Sample Group

<b>Question (s)</b>	<b>Quantity of Correct Answers</b>	<b>Percentage of Questionnaire Answerers</b>
1. Primary sickness care	221	90.95
2. Symptoms of cold	214	88.07
3. Disease observation and separation from other diseases in order to prevent children from possible danger	207	85.19
4. Care of children having a high fever	108	44.44
5. Causes of cold	98	40.33
6. Primary sickness care of fever reduction for children	24	9.88
<b>Total</b>		<b>59.81</b>

- Qualitative Study Outcomes

The application of knowledge evaluation of the sample group having family members catching a cold was conducted by interviewing three persons, which could be summarized as follows:

(1.1) In terms of disease and communication prevention for all family members, one of the three patients was a child, who was taken care by his mother working as the family health leader. The mother could answers the questions, in terms of, the prevention correctly. In addition, the sample group had prevented their children from catching a cold and took care of them quite well, so that, these children

would be healthy and strong. When a family member caught a cold, they would separate the patient from other family members especially from children because children were weak and could get infected easily. If children got sick, there was a possible opportunity of intervened condition. In terms of prevention, adults usually did not have any serious prevention but they would be careful when contacting with sick children. The sample group, who was a mother of a child told that:

*“The prevention of cold for children was difficult because children could be infected all the times. Although I took care of my children, I could not stay with them all the times. In fact, children were naughty and played a lot, so they could be easily sick. Therefore, the best prevention was to make children healthy so that they could not be easily infected by any diseases.”*

A male patient aging 41 years old, who caught a cold, had a good knowledge of disease prevention. He could answer the questions correctly and precisely. He had an opinion to prevent from catching a cold that:

*“There was no need to prevent from a cold. If our body was strong, we would not get sick. However, I was exposed to the rain everyday; when my body got weaker, it was easy to catch a cold.”*

The last patient was female aged 61 years old. She was taken care of by her daughter-in-law, who had knowledge of cold, in terms of, the prevention. In addition,

she could answer the questions correctly and had adopted the knowledge to prevent from a cold saying that:

*“A cold was derived from virus. If a family member caught a cold, other members should be careful and did not get close to the patient. Additionally, the patient carer had to be healthy and careful of coughing and sneezing between the patient and other members. When my mother-in-law got sick, I had to take care of her and prevented children from getting infected from their grandmother.”*

(1.2) In terms of health care and its steps, the sample group had the knowledge of primary health care according to the symptoms, that is, when a patient had a fever, they would wipe the body of the patient or gave the patient medicines to reduce a fever. In case of children patients, the family health leaders could tell about the correct method of body wiping. In addition, the family health leaders had taken care of the patient and kept children warm and encouraged them to take much water to reduce fever. When having a sore throat, the family health leaders gave advice to drink warm water and take soft food, such as, boiled rice and soup. The family health leaders bought medicines from a drug shop, where there was a pharmacist, in the village. Furthermore, they would bring a patient having serious symptom to the public health center when their symptoms got worse. Additionally, the family health leaders would remind the patients to take medicines according to the doctor’s orders.



(1.3) In terms of knowledge transfer and suggestions to family members, the sample group had transferred knowledge of cold including the self-health care to the family members. The knowledge transfer was conducted and aimed for a recall. In addition, there would be a narration and suggestions when some events occurred. Thus, the narration and knowledge transfer were gradually conducted according to the situations in family rather than transferring all knowledge at the same time. Therefore, the narration and contents would not be ordered as they were narrated in practical styles, suggestions or prompt offers to patients. For instance, when an elderly caught a cold, the sample group did not transfer knowledge directly to him/her that he/she should be careful of disease transmission; however, the sample group would offer the patient a handkerchief instead, encouraging him/her to use it when coughing or sneezing. Moreover, the sample group would tell their children not to stay near the patient or should play away from the patient.

*“I would not allow children to stay near their grandmother because she caught a cold coughing and sneezing. I told them to stay away and told the grandmother to exploit a handkerchief when coughing or sneezing.”*

Thus, it could be seen that, the knowledge transfer and suggestions were conducted and applied according to the situations and family contexts.

- Conclusion of Study Outcomes

In concluding the primary care of the sample group when a family member caught a cold, it was found that the sample group had a good level of

knowledge. In terms of primary care of fever reduction, although the sample group could answer the questionnaires just a little, they could answer the questions correctly when asking about the actual application because there were various questions to be asked through interview, which might be consistent with the information of the sample group.

#### 4.3.1.3 Outcomes of Basic Public Health Services

The knowledge evaluation of the basic public health services included (1) family planning (2) immunity providing for newborn to 5-year-old children (3) care of pregnant women (4) nutrition of newborn to 5-year-old children. The study outcomes consisted of quantitative and qualitative outcomes including overall conclusion as the following details:

##### (1) Family Planning

- Quantitative Study Outcomes

The sample group had low level of knowledge, in terms of, family planning as 56.38% could answer the questions correctly. When considering each question, 86.01% could answer the questions about knowledge of objectives of family planning, whereas, 26.75% could answer about the proper methods of birth control when having sufficient children. When considering this question, the understanding in terms of the birth control established by the Ministry of Public Health and the understanding of sample group was different. According to the villagers, the proper method of birth control was to take birth-control pills. This indicated that the sample

group could select their own proper method and convenience of birth control as shown in Table 4.10.

**Table 4.10:** Knowledge of Family Planning of Sample Group

Question (s)	Quantity of Correct Answers	Percentage of Questionnaire Answerers
1. Objectives of family planning	209	86.01
2. Proper birth controls when having sufficient children	65	26.75
<b>Total</b>		<b>56.38</b>

### Qualitative Study Outcome

The knowledge of family planning was at a good level because the birth control had a coverage of 95%, which passed the criteria of Ministry of Public Health. The adult women preferred taking birth-control pills because this method would make their menses come on time. In their opinion, this led to good blood circulation and their health. In addition, it was convenient to receive the birth-control pills from the public health volunteers or to buy them from the drugstore in the village. On the other hand, the contraceptive injection was depending on each person's convenience and preference. Additionally, the use of birth control depended on their desirable amount of children. They did not plan to have only two children, as campaigned by the Ministry of Public health. Most of the sample group did not want to have many children, thus they were interested in birth control, in order to control the amount of children and to leave a space from pregnancy.

- Conclusion of Study Outcomes

In conclusion, the sample group had a high level of family planning knowledge although the knowledge considered from the questionnaires was at a medium level. However, the application information was good as the villagers had adequate birth spacing and could willingly select the proper method of birth control. In addition, the utilization rate of birth control was 95%.

(2) Immunization

- Quantitative Study Outcomes

The sample group had knowledge about immunization and 15.645% could answer the questions correctly, in terms of, vaccination for newborn until one-year-old children. The researcher found that this question was dealt with memorization. When the sample group could not remember about vaccines, they could not answer the questions correctly because there were no one-year-old children in their. Accordingly, their knowledge evaluation turned out to be at a low level as shown in Table 4.11.

**Table 4.11:** Knowledge of Immunization of Sample Group

Question (s)	Quantity of Correct Answers	Percentage of Questionnaire Answerers
1. Vaccines provided for newborn until one-year-old children	38	15.64

- Qualitative Study Outcomes

According to the visits, although the sample group could not tell about vaccines provided for children aging below one year old or could answer correctly in some part, they could remember when they had to bring their children to be vaccinated. Being able to bring children to be vaccinated correctly showed that they paid importance to immunization for children. That the sample group could tell about the period of vaccination and could bring their children to be vaccinated correctly at appointed time leading to a successful immunization Village Number 4, had a coverage of 98% because there was not only the appointment for vaccination but also the follow-up system by PHVs, that is, PHVs would follow up the vaccination of children ages below five years old in their responsible area who missed their vaccination appointments.

- Conclusion of Study Outcomes

In summary, the sample group had a medium level of immunization knowledge although the information from the questionnaires, in terms of, vaccines for newborn to one-year-old children was at a low level. However, it was found that the sample group had paid importance to immunization because they brought their children to be vaccinated as appointed. According to the information recorded at the public health center, it was revealed that 100% of children in the area had been vaccinated.

### (3) Pre-Natal Care

- Quantitative Study Outcomes

The sample group had knowledge about pre-natal care of pregnant women and 90.53% could answer the questions correctly. Accordingly, their knowledge evaluation was at a high level as shown in Table 4.12.

**Table 4.12:** Knowledge of Pre-Natal Care of Sample Group

Question (s)	Quantity of Correct Answers	Percentage of Questionnaire Answerers
1. Self-conduct of pregnant women	220	90.53

- Qualitative of Study Outcomes

In terms of application knowledge based on the visits of six pregnant women in the sample group, they could correctly tell about self-care during pregnancy, i.e., nutrition, rest, prenatal visits, dental health and vaccination (tetanus). In examining their pregnancy record books, their pregnancy under the doctor's care was normal. According to the information of public health center, there would be 100% of care and follow-up performed by PHVs. According to the details of PHVs, there was a good cooperation from pregnant women, thus there was no need of much follow-up. These pregnant women would usually come for services as scheduled. However, if they could not come on the appointed date, they would come later. The researcher found that these pregnant women paid importance to pregnancy under the doctor's care because they would like their child to be healthy. In addition, they preferred receiving prenatal

services from the public health center because they would like the public health center to refer their delivery at the hospital.

- Conclusion of Study Outcome

In conclusion, the sample group had a high level of pre-natal care knowledge according to the information from questionnaires, in terms of, self-care of pregnant women and review of pregnancy record books. In addition, according to the information of public health center, it was revealed that pregnant women had paid importance to their self-care and could take care of their pregnancy correctly based on the criteria.

#### (4) Nutrition

- Quantitative Study Outcomes

The sample group had knowledge about nutrition where 91.36% could answer the questions correctly, in terms of, child nutrition from newborn to five years old. Accordingly, their knowledge evaluation was in a high level as shown in Table 4.13.

**Table 4.13:** Knowledge of Nutrition of Sample Group

Question (s)	Quantity of Correct Answers	Percentage of Questionnaire Answerers
1. Methods of child nutrition from newborn to five years old	222	91.36

- Qualitative Study Outcome

In terms of application knowledge based on the visits, the sample group could properly take care of nutrition for children. They paid much importance to useful food intake than being more concern of the weight. In addition, the sample group could correctly tell about proper food for children below five years old. In terms of weighing, children aging below 1.5 years old were regularly weighed when they went to the public health center for immunization. Thus, their weight would be recorded in their personal record book. However, the public health volunteers would only follow up children who were undernourished at the first degree.

- Conclusion of Study Outcomes

In summary, the sample group had a high level of nutrition knowledge considered from the questionnaires. In terms of visits and interviews, the sample group could correctly answer the questions about nutrition for children below five years old. Additionally, according to the information of public health center in terms of nutrition of children below five years old, it was revealed that there was only a child, who was undernourished in the first degree but this could have been attributed to the small stature of his parents.

## (5) Consumer Protection

- Quantitative Study Outcomes

The sample group had knowledge, in terms of consumer protection, as 93.00% could answer the questions correctly regarding ready made food, and 92.59% could answer about the danger of self medications. In terms of overall



knowledge evaluation, the sample group had a high level of knowledge and 93.00% could answer the questions correctly as shown in Table 4.14

**Table 4.14:** Knowledge of Consumer Protection of Sample Group

<b>Question (s)</b>	<b>Quantity of Correct Answers</b>	<b>Percentage of Questionnaire Answerers</b>
1. Ready-food buying	226	93.00
2. Danger of set medicine	225	92.59
<b>Total</b>		<b>93.00</b>

- Qualitative Study Outcomes

In terms of application knowledge, the sample group could correctly answer that they should see the approval seal from the Food and Drug Administration on the products when selecting and buying ready made food. In addition, they should examine the products for defects, such as, the tins should not be dented or bags should not be torn etc. However, most sample group could not tell about the expiry date because the expiry date was written in English with very small number letters like “Exp. 1/12/2005”. Thus, it was difficult to the villagers to understand and observe, because although the expiry date was written in Thai, they were still written with very small letters. In terms of purchasing drugs, the sample group did not buy medicines at the groceries because they knew that it was not safe. Thus, they would buy medicine at the drugstore in the village where there was a pharmacist. Accordingly, most villagers preferred buying medicines from the drugstore in the village (Ratchanee Pharmacy).

- Conclusion of Study Outcomes

In conclusion, the sample group had a high level of consumer protection when evaluated by questionnaires and interviews when visiting their houses.

#### 4.3.1.3 Outcomes of Health Insurance

- Quantitative Study Outcomes

The sample group had knowledge about the importance and necessity of health insurance, as 95.06% could answer the questions correctly about the 30-Baht-Health-Insurance Card. Their knowledge evaluation was at a high level as shown in Table 4.15.

**Table 4.15:** Knowledge of Health Insurance of Sample Group

Question (s)	Quantity of Correct Answers	Percentage of Questionnaire Answerers
1. Importance and necessity of health insurance through 30-Baht-Health-Insurance Card	231	95.06

- Qualitative Study Outcomes

In terms of evaluating the application of knowledge, the sample group had a high level of knowledge about health insurance. They knew that they must applied for the health insurance and that they could choose the health care setting which could be either public or private In case of private clinic, the villagers would receive prompt and good services; they did not wait for a long time as well. Thus, the villagers

were consequently willing to pay for their treatment. In addition, it was found that all families had health insurance cards.

- Conclusion of Study Outcomes

In summary, the sample group had a high level of knowledge about health insurance, in terms of its importance and the necessity, as well as the application process.

#### 4.3.2 The tests of the relationship between personal factors and knowledge level

When using chi-square test to investigate the relationship between gender and knowledge level, it was found that there was no relationship as shown in Table 4.16.

**Table 4.16:** The Relationship Between Gender and Knowledge Level

Personal Factor	Knowledge Level			Total
	Low	Medium	High	
Gender (n = 243)				
- Male	14 (13.86)	47(46.53)	40(39.60)	101(100.0)
- Female	9(6.34)	68(47.89)	65(43.21)	142(100.0)
<b>Total</b>	<b>23(9.47)</b>	<b>115(47.32)</b>	<b>105(43.21)</b>	<b>243(100.0)</b>
$\chi^2 = 4.072$ d.f. = 2      p-value = 0.131				

When testing the relationship between age and knowledge level, it was found that there was no relationship as shown in Table 4.17.

**Table 4.17:** The Relationship Between Age and Knowledge Level

Personal Factor	Knowledge Level			Total
	Low	Medium	High	
Age (n = 243)				
- 20 – 29 years old	2(10.53)	7(36.84)	10(52.63)	19(100.0)
- 30 – 39 years old	5(9.26)	28(51.85)	21(38.89)	54(100.0)
- 40 – 49 years old	7(10.61)	25(37.88)	34(51.52)	66(100.0)
- 50 – 59 years old	4(7.02)	29(50.88)	24(42.11)	57(100.0)
- Over 60 years old	5(10.64)	26(55.32)	16(34.04)	47(100.0)
<b>Total</b>	<b>23(9.47)</b>	<b>115(47.33)</b>	<b>105(43.21)</b>	<b>243(100.0)</b>
$\chi^2 = 5.858$ d.f. = 8      p-value = 0.663				

When testing the relationship between marital status and knowledge level, it was found that there was no relationship as shown in Table 4.18.

**Table 4.18:** Relationship of Personal Factor Between Marital Status and Knowledge Level

Personal Factor	Knowledge Level			Total
	Low	Medium	High	
Marital Status (n = 243)				
- Married	15(8.47)	84(47.46)	78(44.07)	177(100.0)
- Single, widowed, divorced / separated	8(12.12)	31(46.97)	27(40.91)	66(100.0)
<b>Total</b>	<b>23(9.47)</b>	<b>115(47.32)</b>	<b>105(43.21)</b>	<b>243(100.0)</b>
$\chi^2 = 0.789$ d.f. = 2      p-value = 0.674				

When testing the relationship between occupation and knowledge level, it was found that there was no relationship as illustrated in Table 4.19.

**Table 4.19:** The Relationship Between Occupation and Knowledge Level

Personal Factor	Knowledge Level			Total
	Low	Medium	High	
Main Occupation (n = 243)				
- Agriculture (Paddy Farming, Gardening, Farming, Animal Raising)	9(9.18)	45(45.92)	44(44.90)	98(100.0)
- Non-agriculture(Employee, Merchant, Government Service)	12(9.52)	63(50.00)	51(40.48)	126(100.0)
- Housewife	2(10.53)	7(36.84)	10(52.63)	19(100.0)
<b>Total</b>	<b>23(9.47)</b>	<b>115(47.32)</b>	<b>105(43.21)</b>	<b>243(100.0)</b>
$\chi^2 = 1.377$ d.f. = 4      p-value = 0.848				

When testing the relationship between educational level and knowledge level, it was found that there was a marginal relationship because p-value was 0.060, which was close to the statistical significance at  $\alpha = 0.05$ . Those with higher education tended to have higher level of knowledge. (Table 4.20)

**Table 4.20:** The Relationship Between Educational Level and Knowledge Level

Personal Factor	Knowledge Level			Total
	Low	Medium	High	
Educational Level (n = 243)				
- Primary	19 (10.27)	88 (47.57)	78(42.16)	185 (100.0)
- Secondary	3 (8.57)	21(60.00)	11(31.43)	35(100.0)
- Diploma / Bachelor's Degree	1 (4.35)	6(26.09)	16(69.57)	23(100.0)
<b>Total</b>	<b>23(9.47)</b>	<b>115(47.32)</b>	<b>105(43.21)</b>	<b>243(100.0)</b>
$\chi^2 = 9.044$ d.f. = 4      p-value = 0.060				

When testing the relationship between family income and knowledge level, it was found that the relationship was statistically significant at  $\alpha = 0.05$  (p-value = 0.002). Those with higher income had the higher level of knowledge than the ones having lower income, as shown in Table 4.21.

**Table 4.21:** The Relationship of Personal Factor Between Income and Knowledge Level

Personal Factor	Knowledge Level			Total
	Low	Medium	High	
Average Income of Family (n = 243)				
- Less than 5,000 Baht	19(15.57)	57(46.72)	46(37.70)	122(100.0)
- 5,000 – 10,000 Baht	4(4.00)	52(52.00)	44(44.00)	100(100.0)
- Over 10,000 Baht	0(0.00)	6(28.57)	15(71.43)	21(100.0)
<b>Total</b>	<b>23(9.47)</b>	<b>115(47.32)</b>	<b>105(43.21)</b>	<b>243(100.0)</b>
$\chi^2 = 16.725$ d.f. = 4    p-value = 0.002				

When testing the relationship between quantity of family members and knowledge level, it was found that there was no relationship as shown in Table 4.22.

**Table 4.22:** The Relationship of Personal Factor Between Quantity of Family Members and Knowledge Level

Personal Factor	Knowledge Level			Total
	Low	Medium	High	
Quantity of Family Members (n = 243)				
- Less than 5 persons	14(7.65)	85(46.45)	84(45.90)	183(100.0)
- Over 5 persons	9(15.00)	30(50.00)	21(35.00)	60(100.0)
<b>Total</b>	<b>23(9.47)</b>	<b>115(47.32)</b>	<b>105(43.21)</b>	<b>243(100.0)</b>
$\chi^2 = 3.942$ d.f. = 2    p-value = 0.139				

- Conclusion of the tests in terms of the relationship between personal factors and knowledge level

There was a marginal relationship between education and knowledge level. The only other personal factor that had a statistically significant relationship with knowledge was income.

## **4.4 Outcome**

In this study, outcome was the behavioral evaluation. Accordingly, the outcomes of behavioral evaluation of the sample group were descriptive explaining the behavioral level, as well as, the relationship between personal factors and behavior.

### **4.4.1 Outcomes of Behavioral Evaluation**

The behavioral evaluation of the sample group could be divided into five sections, that is, (1) Overall conclusion of behavioral outcomes, (2) Behaviors of local diseases, (3) Primary care, (4) Public health services and (5) Health insurance. The study outcomes of items 2, 3, 4 and 5 consisted of quantitative and qualitative outcomes including overall conclusion as described below:

#### **4.4.1.1 Overall Conclusion of Behavioral Outcomes**

The overall conclusion of behavioral outcomes of the sample group was divided by 48 marks having the mean of 40.39. When being divided in terms of behavioral level of local diseases, such as, AIDS, hemorrhagic fever, diarrhea, diabetes, hypertension; primary care when catching a cold; public health services, such as, family planning, immunization providing for newborn to 5-year-old children, care of pregnant

women, nutrition of newborn to 5-year-old children and health insurance, the knowledge evaluation could be summarized according to the objective of the project. According to the project's objective, at the end of the training, the family health leaders had to gain 70% (34-48 marks) of correct behavior. Based on this criteria, this study defined 70% as high level, it was found that 50 – 69% of behavioral evaluation (24 – 33 marks) as medium level of behavior whereas a person getting less than 50% of the evaluation (1 – 23 marks) as low level of behavior.

In summary, the 185 persons (76.13%) of the sample group had a high level of regular behavior; 49 persons (20.17%) had a medium level of behavioral knowledge and 9 persons (3.70%) had a low level of behavior, as shown in Table 4.23. The details of behavioral evaluation in the project could be described as follows:

**Table 4.23:** Behavioral Level of Sample Group

<b>Behavioral Level</b>	<b>Quantity</b>	<b>Percentage</b>
- High (34 – 48 marks)	185	76.13
- Medium (24 – 33 marks)	49	20.17
- Low (1 – 23 marks)	9	3.70
- $\bar{X}$	40.39	
- SD	5.49	
- Max	48	
- Min	16	

#### 4.4.1.2 The Behavioral Evaluation Outcomes of Local Diseases

The behavioral evaluation outcome of local diseases of the sample group in terms of (1) AIDS (2) Hemorrhagic Fever (3) Diarrhea (4) Diabetes and (5)



Hypertension consisted of quantitative and qualitative study outcomes including overall conclusion as the following details:

(1) AIDS

- Quantitative Study Outcomes

The researcher could not evaluate this issue from the questionnaires because most villagers of sample group did not answer this question. According to the inquiry, most male study subjects answered that they did not have any sexual intercourse with prostitutes or did not like to answer this question whereas most female study subjects did not answer this question because they did not know if their husbands had any sexual affair with the prostitutes. Although husbands might be the risk group and had sexual intercourse with prostitutes but they could not answer if their husbands used condoms. The researcher found that the use of questionnaire to evaluate the behavior of AIDS prevention through condoms was not possible as the sexual affair with other women was not accepted by society and most men usually concealed this affair. Thus, there should be other evaluation in terms of AIDS prevention, such as, the quantity of HIV patients or AIDS patients in the village. Therefore, to provide and support the disease prevention, the knowledge should be provided. Moreover, the villagers should realize about the danger and effects of HIV infection to the family and community so that the risk group could understand and prevent themselves from AIDS.

- Qualitative Study Outcome

As there was no AIDS patient in the study area and neighborhood, the evaluation of disease prevention could not be conducted by interview. In addition, according to the information of public health center, there was no AIDS patient in the study area and neighborhood.

- Conclusion of Study Outcomes

The evaluation of AIDS prevention of sample group could not be conducted by questionnaires. However, according to the information of public health center, there was no AIDS patient in the study area.

## (2) Hemorrhagic Fever

- Quantitative Study Outcomes

According to the study, 88.29% of sample group had a regular behavior of hemorrhagic fever prevention, in terms of house cleaning; 65.02% had no water puddles inside and outside their house; 64.64% surveyed the origins of common house mosquitoes both inside and outside their houses, whereas, 34.98% added “abate sand” in jars, ditches, cupboard saucers and vases. For the overall behavior consideration, 63.37% of the sample group had a medium level of regular practice as described in Table 4.24.

**Table 4.24:** Behavior of Disease Prevention and Health Care of Individual and Family Levels

Health Care Behavior and Disease Prevention	Percentage (%) of Practice			Percentage (%) of Non-Practice
	Regular	Occasional	Seldom	
1. House Cleaning	216 (88.29)	21 (8.64)	6 (2.47)	0
2. Taking care of no water puddles inside and outside the house	158 (65.02)	56 (23.05)	23 (9.47)	6 (2.47)
3. Surveying the origins of common house mosquitoes both inside and outside their houses	157 (64.61)	61 (25.10)	21 (8.64)	4 (1.65)
4. Adding Abate Sand in jars, ditches, cupboard saucers and vases.	85 (34.98)	81 (33.33)	33 (13.58)	44 (18.11)
<b>Total</b>	<b>154 (63.37)</b>	<b>54 (22.53)</b>	<b>89 (36.63)</b>	<b>54 (22.22)</b>

- Qualitative Study Outcomes

According to the interviews of sample group, a patient suffering from hemorrhagic fever was a seven-year-old boy, who was taken care of by his mother. In terms of the sickness care, the family health leader could take care of this patient correctly according to the symptoms, in terms of wiping a body to reduce a fever, providing medicines for patient and bringing the patient to the hospital when his symptom got worse. The family health leader told us that:

*“The boy had had fever for two days, so she gave him paracetamol, which her husband bought from a drugstore in the village. She had wiped her child’s body but his symptom was not better. Then, she discussed this with her husband and brought her child to a clinic on the third day. The doctor examined her child and prescribed three kinds of medicine. After having taken these medicines until the fifth day, she observed that her child’s eyes were terribly red and he had a hallucination of ghost at night, so she took him to Na Yong Hospital.”*

In terms of hemorrhagic fever prevention, according to the observations, it was found that the sample group had the following preventive behaviors in their household:

- Drinking Jars

As having drinking jars was necessary, all households had drinking jars and jar covers, which were made of aluminum or wood. Therefore, when examining with a searchlight, there were no larvae of common mosquitoes. These jars were utilized to store rainwater.

- General Jars

In terms of general jars, some families used black plastic buckets without covers. When examining with a searchlight, there were no larvae of common mosquitoes because these jars were located in a kitchen for cooking and washing dishes or vegetables. In addition, the water would be changed everyday. When observing washing tub, there were larvae of common mosquitoes in a household because this tub had not been cleaned and used because the family members had not stayed at home for

two weeks and just came back from Pattalung Province due to the funeral of their relative. Most villagers usually fetched water from a well and used it for bathing immediately. The well in the house had a cover but a well outside would be used by a few other households. Although these wells did not have any covers, no larvae of common mosquitoes were found.

- Flower Vases

Most households did not have flower vases containing water but they usually used vases for putting dry flowers to decorate their houses.

- Flowerpot Saucers

36 Households had flowerpots. However, there were no flower pot saucers used and hold water.

- Cupboard Saucers

89 Households had cupboards with saucers under each leg which holds water to prevent ants. In details, 56 families of the total households had cupboard saucers whereas 42 households had added abate sand, salt and hot water. No larvae common mosquitoes were found. In addition, 14 households did not have any water nor larvae of common mosquitoes in the cupboard saucers.

- Used Tires

Five households used tires to raise fish and grow trees; no larvae of common mosquitoes were found.

#### - Tins and Coconut Shells

In the area of 15 households, there were scraps of powder tins and coconut shells but there were no water puddles. After asking the public health volunteer, the volunteer narrated that: “I would investigate larvae of common mosquitoes in households and usually gave suggestions to some households, which could have larvae of common mosquitoes. Most households cooperated and followed the recommended prevention strategies. However, children still played with tins and coconut shells which were left unattended by the children.”

- Conclusion of Study Outcomes

The behavioral evaluation of hemorrhagic fever prevention of sample group was at a high level. As there were many patients suffering from hemorrhagic fever in the village in the previous year, the villagers were encouraged to pay importance to the disease prevention through eliminating the sources of larvae of common mosquitoes. Moreover, in the previous year, the public health center implemented the hemorrhagic prevention project by providing many regular activities and knowledge for students to practice at their homes.

#### (3) Diarrhea

- Quantitative Study Outcome

According to the study of diarrhea prevention behavior, 97.12% of sample group had a regular behavior of hemorrhagic fever prevention in terms of excretion in the hygienic toilets; 89.71% washed fresh vegetables and fruits before eating; 86.42% disposed of garbage both inside and outside of their houses; 73.25%

warmed remaining food before eating; 72.43% drank clean or boiled water; 69.55% washed their hands with soap after going to toilets, whereas, 60.08% washed their hands before cooking. For the overall behavior, 78.38% of the sample group had a high level of regular practice as shown in Table 4.25.

**Table 4.25:** Behavior of Disease Prevention and Health Care of Individual and Family Levels

<b>Health Care Behavior and Disease Prevention</b>	<b>Percentage (%) of Practice</b>			<b>Percentage (%) of Non-Practice</b>
	<b>Regular</b>	<b>Occasional</b>	<b>Seldom</b>	
1. Excretion in the hygienic toilets	236 (97.12)	1 (0.41)	6 (2.47)	<b>0</b>
2. Washing fresh vegetables and fruits before eating	218 (89.71)	18 (7.41)	6 (2.47)	<b>1 (0.41)</b>
3. Eliminating garbage both inside and outside houses	210 (86.42)	24 (9.88)	9 (3.70)	<b>0</b>
4. Warming remaining food before eating	178 (73.25)	36 (14.81)	14 (5.76)	<b>15 (6.17)</b>
5. Drinking clean or boiled water	176 (72.43)	52 (21.40)	12 (4.94)	<b>3 (1.23)</b>
6. Washing hands with soap after going to toilets	169 (69.55)	56 (23.05)	11 (4.53)	<b>7 (2.88)</b>
7. Washing hands before cooking	146 (60.08)	82 (33.74)	10 (4.12)	<b>5 (2.06)</b>
<b>Total</b>	<b>190 (78.37)</b>	<b>38 (15.81)</b>	<b>10 (4.00)</b>	<b>31 (12.76)</b>

- Qualitative Study Outcomes

In terms of diarrhea, according to the interviews of five care takers of sample group consisting of three children patients, it was found that, in terms of health care, the sample group could make salt water and two persons could even tell about the mixture method. However, some persons could not tell about the mixture because they only knew the method but did not make it by themselves saying that water salt could be bought in the village and had a better taste, so a patient preferred drinking such bought salt water. There were several methods that replaced water with other available liquid, such as, adding salt in the boiled rice or Sprite soft drink, making a soup and milk dilution for children. In terms of the prevention of transmitting to other family members, they would wash their hands with soap several times when there was a patient at home. In terms of referral, all serious patients had been brought to the public health center in time.

The prevention of diarrhea: The researcher visited 243 households and found the following details:

- Garbage Bins: All households used bins inside their house. Most bins had no covers; bins, in general were usually in the form of tins having 6-10” diameters. However, some families used only a plastic bag, which would be thrown away or burnt. Most bins were placed in the kitchen and as there were no covers, there were a few flies swarming around the bins. However, the garbage would be thrown away everyday especially in the evening when the bins were full of garbage. Some families would throw their bins in the area of their house but some would use scraps of food to feed chicken. In addition, 25 households had bins with covers because these households



were quite rich. Thus, there were no flies swarming around these bins. Moreover, these families built their house with mosquito screen doors and windows in their clean kitchens.

- Garbage Elimination: All households eliminated the garbage by burning the garbage near their house. Thus, the trails of garbage burning could be regularly observed. In general, the villagers would throw garbage away and burnt them immediately excepting when it rained. Most garbage that was burnt consisted of leaves, grass, plastic bags, tins or food scraps. In terms of wet trash, which could be disintegrated, they were fed to the chicken, such as, water melon shell, which were throw out from a house after having it. If the chicken did not eat it anymore, it would be burnt. The problem garbage was the discarded garbage on the road side or other unattended areas. According to the conversation, a villager said that:

*“There was no operation. Previously, there was a campaign to pick up all garbage in the village, the village, then, was clean just a moment. However, SAO. Only took care of a market. Apart from this, there was no one responsible for it.”*

In addition, it was found that, there was no garbage pile in the village, indicating that each household managed their own garbage elimination; there was no mutual garbage elimination of the village.

- In terms of the behavior to wash hands with soap after using toilets (there was a soap in toilets), according to the observation of 243 households and eight

months of data collection, the researcher had an opportunity to see the behavior of 36 villagers after using toilets. Among these villagers, only 13 persons washed their hands with soap, whereas, 23 persons washed their hands with water. In addition, there was a soap provided in toilets of 68 households. In general, the soap would be placed together with toothbrush, toothpaste, powdered detergent and would be used only when taking a bath.

- Drinking clean or boiled water was usually conducted in households where there were children and old persons. Among 213 households, there were flasks keeping hot water, teapots or electric vacuum flasks. Boiled water would be kept in bottles (transparent glass bottles). Most households drank rainwater kept in jars with covers. However, 29 households bought drinking water contained in the big plastic bottles. Adults would drink this water promptly but it would be boiled for children. On the other hand, 18 households drank water from a well without any boiling. These households were usually poor and lived in the area called “village slum” and they did not paid any attention to their health care.

- In terms of eating raw food, the villagers did not like to eat such food. Even, the men drinking alcohol had to cook food before eating it. However, according to the inquiry, some men used to eat raw food such as blood minced meat salad, spicy raw meat salad, raw small shrimps etc. These men said that they just tried these foods but did not regularly eat them. In addition, they thought that raw food belonged to Laotian persons; thus no one ate it.

- In terms of having hygienic toilets, it was found that 243 households had their own toilets and would normally go to a toilet when they would like to do an excretion. The toilets were low, thus the villagers had to sit on their heels. Most toilets were located outside the house. In toilets, there was usually only a water bucket and water bowl. However, in some toilets, there was only a bucket without water because there was no water in a well due to a drought period. Thus, the existing water had to be kept and stored for cooking and household utilization. For most households, there was a bathroom in a house for taking a bath, washing clothes and utensils, whereas, the outside toilet, which was smaller, would be used for the excretion only.

- According to the observation, the excretion in a toilet was conducted in all households. However, the researcher observed that after a child below one year old had excreted, his mother used sand to cover his excretion but she did not take it to throw in a toilet. In some families, children used a chamber pot and their parents usually throw the excretion in a toilet. According to the inquiry, it was found that adults would excrete in a toilet, whereas, some little children, who could not use any toilet, still excreted randomly. However, their mothers did not eliminate their excretion correctly and properly.

- Conclusion of Study Outcomes

In conclusion, the preventive behavior of diarrhea of sample group was in a medium level. Although the behavioral evaluation of questionnaires showed a good level of regular practice, the evaluation from interviews and observations

indicated that there were no serious and regular practices including the preventive behavior for diarrhea.

#### (4) Diabetes and Hypertension

- Quantitative Study Outcomes

In this research, 63.79% of the sample group had regular preventive behavior, in terms of self-health care by taking five-nutritious-group food; 27.98% had exercised at least three days a week, whereas, 9.05% had taken sweet or pickled food. The researcher found that it was very difficult to change the behavior of taking sweet food in the community because the villagers believed that they had to have some sweets in order to have a complete meal. Additionally, they expressed that, having some sweets after the main meal would give them energy to work hard, as illustrated in Table 4.37. Moreover, the activities of health care aiming to prevent the villagers from diabetes and hypertension were included in the routine project of the village. Thus, there was an exercise everyday in the village as described in Table 4.26.

**Table 4.26:** Behavior of Disease Prevention and Health Care of Individual and Family Levels

Health Care Behavior and Disease Prevention	Percentage (%) of Practice			Percentage (%) of Non-Practice
	Regular	Occasional	Seldom	
1. Taking five-nutritious-group food	155 (63.79)	69 (28.40)	19 (7.82)	0
2. Exercising at least three days a week	68 (27.98)	116 (47.74)	42 (17.28)	17 (7.00)
3. Taking sweet or pickled food	22 (9.05)	121 (49)	93 (38.27)	7 (2.88)
<b>Total</b>	<b>82 (33.75)</b>	<b>102 (41.96)</b>	<b>51 (20.99)</b>	<b>24 (9.88)</b>

### Qualitative Study Outcomes

According to the interviews of three diabetes patients suffering from diabetes, in terms of health care behaviors, it could be concluded that the family members participated in taking care of their health. The family leaders would get medicines and brought family members for an examination as appointed at the public health center or at the hospital. The female family health leaders, who were housewives, would provide proper food for diabetic patients, such as, food containing vegetables and protein. Moreover, they would provide available food for diabetic patients, such as, steamed fish but would prohibit the patients to have sweet-taste food, such as, sweets or some sugary fruits like durians and rambutans. In terms of male family leaders, they would allow their wives to take care of family members. In addition, the practices of patients usually depended on themselves and the way they paid importance to the disease.

In terms of hypertension, four public health volunteers and four patients suffering from hypertension were interviewed. It was found that, in terms of health care, the sample group had brought the patients to be examined and received medicines as appointed. Moreover, they would take care about proper food according to the health problem of patients. Some families had provided this for patients; however, in some families, the patients had to take care of this for themselves. Some patients had knowledge and could answer the questions because they received the suggestions from the doctor when they received medicines continuously as a patient said that:

*“Seeing the doctor as appointed was ok and was not so difficult. However, there was a problem because I had to wait until my children finished their work. Having children was good because we could depend on them when getting sick. My children were trained and would tell me about the trainings. However, I could remember only some details. Sometimes, I asked it from a child of Noi (PHV). If he had any news, he would visit and tell me.”*

### **Conclusion of Study Outcomes**

In conclusion, the preventive behavior of diabetes and hypertension was in a medium level. Although the behavioral evaluation of questionnaires showed a low level of regular practice, the evaluation from interviews indicated that there were regular practices and health cares, such as, exercise and nutritious meals. The patient care of sample group was at a good level because it achieved the objective of the project, in terms of, sickness care, treatment based on the appointment including assistance of self-practice. Hypertension and diabetes were usually found in old persons. In terms of

knowledge, the knowledge would be regularly provided in the village and the sample group had supported for this as well.

#### 4.4.2.2 Primary Sickness Care of Sample Group

##### (1) Cold

- Quantitative Study Outcomes

The primary sickness care behavior of sample group when catching a cold was regular, that is 82.30 had good care in terms of resting and having good meals while 80.25% took medicines and much water in order to reduce fever. In addition, when considering the overall behavior, 81.48% of the sample group had a regular practice as shown in Table 4.27.

**Table 4.27:** Behavior of Disease Prevention and Health Care of Individual and Family Levels

Health Care Behavior and Disease Prevention	Percentage (%) of Practice			Percentage (%) of Non-Practice
	Regular	Occasional	Seldom	
1. Resting and having good meals when catching a cold	200 (82.30)	31 (12.76)	10 (4.12)	2 (0.82)
2. Taking medicines and much water to reduce fever	195 (80.25)	36 (14.81)	10 (4.12)	2 (0.82)
<b>Total</b>	<b>198 (81.48)</b>	<b>33 (13.58)</b>	<b>10 (4.12)</b>	<b>2 (0.82)</b>

- Qualitative Study Outcomes

According to the interviews of sample group and three patients catching a cold, it was found that in terms of sickness care and steps of care, the sample group would take health care based on the symptoms. For instance, when there was fever, they would wipe a body or take medicines to reduce a fever. When asking the sample group of mothers to demonstrate this step, they could wipe a body correctly. Moreover, there were suggestions to keep children warm and take much water to reduce a fever. When having a sore throat, the family health leaders gave advice to drink warm water and take soft food. The family health leaders bought medicines from a drug shop in the village, where there was a pharmacist. Furthermore, they would bring a patient having serious symptom to the public health center when their symptoms got worse. Additionally, the family health leaders would remind the patients to take medicines according to the doctor's orders.

- Conclusion of Study Outcomes

In terms of the evaluation of primary care, when a family member caught a cold, the sample group had high level of care when considered from questionnaires and demonstrations. As the villagers usually caught a cold, the sample group had experiences of care. In addition, they also received suggestions and advice when going to the public health center from the public health officers, thus they could adopt these suggestions.



#### 4.4.2.3 Services of Fundamental Public Health of the Sample Group

##### (1) Family Planning

- Qualitative Study Outcomes

According to the information of the public health center, there were 44 female mature adults having birth control. In addition, other women did not have any birth control because they would like to have more children. According to the visits, when reviewing family planning service record, most women had an appointment for contraceptive injection. In case of taking birth-control pills, they would bring such pills for consideration.

- Conclusion of Study Outcomes

According to the information of the public health center, the evaluation in terms of family planning behavior of the sample group was quite high because the villagers usually and regularly got birth control services when asking to see their service card.

##### (2) Immunization

- Qualitative Study Outcomes

Most children had been fully vaccinated when they were 1-1.5 years old according to the visits of household having children aging below five years old. However, there were 3 children, who were not vaccinated with the second JE vaccine because their parents forgot and the children did not stay at home during the data collection. Accordingly, the PHVs had reminded these parents to let their children be

vaccinated at the public health center but the parents did not bring their children for vaccination.

- Conclusion of Study Outcomes

The immunization record of the sample group was good According to the visits and vaccinating records, the children were vaccinated on all appointmented times.

### (3) Prenatal Care

- Qualitative Study Outcomes

There were 12 pregnant women in the area. According to the visits and the examination of prenatal care record, it was found that most pregnant women had been examined during their pregnancies, vaccinated, blood and mass body index tested. According to the visits, three pregnant women were not present, as the first woman moved to her hometown at Palian District; the second one having 24 weeks of pregnancy, who had a business trip at Songkhla Province did not have a pregnant examination while the last one had put her pregnancy at a clinic in the city (special pregnancy care of delivery operation for her second pregnancy)

- Conclusion of Study Outcomes

The sample group had a good level of prenatal care behavior.

#### (4) Nutrition of Children Aging Below Five Years Old

- Qualitative Study Outcomes

According to the visits of households having children aging below five years old, it was found that most children were weighed by the public health volunteers at their home or at the public health center. However, the weighing was not regularly as some children had been weighed only a few times per year. In addition, most children were not weighed if they did not go to the public health center. When they were older than 1.5 years old, their weighing was not regular either, namely, they were weighed every three months if the public health volunteers were interested. In addition, the public health officers would follow up the children, who had a problem of nutrition, that is, a food deficiency.

- Conclusion of Study Outcomes

The sample group had a medium level of nutrition care behavior for children below five years old. Although there was a few weighing, most children had a normal nutrition condition. Moreover, there was a follow-up for children, who were in the first stage of nutrition deficiency.

#### 4.4.2.4 Health Insurance of Sample Group

- Qualitative Study Outcomes

According to the visits and interviews of sample group, it was found that there was an achievement of health insurance of family members. When asking for showing a health insurance card (30-Baht Card), all families could show their health insurance cards. When they were interviewed about the card application and the right of

treatment, most of them used the card for the services of public health institutes. However, it was found that five villagers still did not have any insurance because their names were not yet included in the census registration and their stay was temporary. In terms of interviews about having health insurance card, the villagers felt confident in seeking health services when they were sick. The selection of public services depended on the personal context and family. However, some villagers did not use the card because they selected the services of hospital or clinic.

- Conclusion of Study Outcomes

In conclusion, the health insurance was at a high level because the project of national health insurance had a policy to encourage all people to get services of public institutes. Additionally, the operation of village health insurance was ready in terms of survey. The arrangement of health insurance was 100% covered because most villagers used the health insurance card when being sick.

#### **4.4.3 The tests of relationship between personal factors, knowledge and behavior of sample group**

According to the tests of relationship between personal factors and behavioral level, it was found that age and # of living children were related to the behavior with statistical significance ( $p\text{-value} < 0.05$ ). On the other hand, sex, marital status, occupation, educational level, income of family and the quantity of family members of sample group had no relationship to behavioral level as following details:

When testing the behavioral level of sample group in terms of the relationship between the quantity of living children and knowledge level, it was found that there was no relationship as shown in Table 4.28.

**Table 4. 28:** The Relationship Between Sex and Behavioral Level

Personal Factor	Behavioral Level			Total
	Low	Medium	High	
Sex (n = 243)				
- Male	3 (2.97)	16 (15.84)	82 (81.19)	101 (100.0)
- Female	6 (4.23)	33 (23.24)	103 (72.54)	142 (100.0)
<b>Total</b>	<b>9 (3.70)</b>	<b>49 (20.17)</b>	<b>185 (76.13)</b>	<b>243 (100.0)</b>
$\chi^2 = 2.433$ d.f.. = 2      p-value = 0.296				

When testing the behavioral level of sample group in terms of the relationship between age and behavioral level, it was found that there was the relationship with statistical significance at 0.05 (p-value = 0.009). ,The sample group being old had the low level of behavior than the sample group being younger such as 82.73% of the sample group aging 20-49 years old had the high level of behavior as described in Table 4.32.

**Table 4.29:** The Relationship Between Age and Behavioral Level

Personal Factor	Behavioral Level			Total
	Low	Medium	High	
Age (n = 243)				
- 20 – 49 years old	2 (1.44)	22 (15.83)	115 (82.73)	139 (100.0)
- Over 50 years old	7 (6.73)	27 (25.96)	70 (67.31)	104 (100.0)
<b>Total</b>	<b>9 (3.70)</b>	<b>49 (20.17)</b>	<b>185 (76.13)</b>	<b>243 (100.0)</b>
$\chi^2 = 9.388$ d.f. = 2      p-value = 0.009				

When testing the behavioral level of sample group in terms of the relationship between marital status and behavioral level, it was found that there was no relationship as described in Table 4.30.

**Table 4.30:** The Relationship Between Marital Status and Behavioral Level

Personal Factor	Behavioral Level			Total
	Low	Medium	High	
Marital Status (n = 243)				
- Married	5(2.82)	31(17.51)	141(79.66)	177(100.0)
- Single, Widowed, Divorced/ Separated	4(6.06)	18(27.27)	44(66.67)	66(100.0)
<b>Total</b>	<b>9(3.70)</b>	<b>49(20.17)</b>	<b>185(76.13)</b>	<b>243(100.0)</b>
$\chi^2 = 4.696$ d.f. = 2      p-value = 0.096				

When testing the behavioral level of sample group in terms of the relationship between occupation and behavioral level, it was found that there was no relationship as described in Table 4.31.

**Table 4.31:** The Relationship Between Occupation and Behavioral Level

Personal Factor	Behavioral Level			Total
	Low	Medium	High	
Occupation (n = 243)				
- Agriculture (Paddy Farming, Gardening, Farming, Animal Raising)	4(4.08)	21(21.43)	73(74.49)	98(100.0)
- Non-agriculture (Employee, Merchant, Government Service, Housewife)	5(3.45)	28(19.31)	112(77.24)	145(100.0)
<b>Total</b>	<b>9(3.70)</b>	<b>49(20.17)</b>	<b>185(76.13)</b>	<b>243(100.0)</b>
$\chi^2 = 0.252$ d.f. = 2      p-value = 0.882				

When testing the behavioral level of sample group in terms of the relationship between educational level and behavioral level, it was found that there might be a marginal relationship because p-value = 0.059, which was near the statistical significance at  $\alpha = 0.05$ . The sample group having the high level of education had the higher level of behavior than the ones having less education, for instance, the sample group graduated in the primary level had the behavioral level at 72.97%, which was lower than the ones graduated in the secondary, diploma / bachelor's degree, who had the high behavioral level at 86.21% as described in Table 4.32.

**Table 4.32:** The Relationship Between Educational Level and Behavioral Level

Personal Factor	Behavioral Level			Total
	Low	Medium	High	
Educational Level (n = 243)				
- Primary	9(4.86)	41(22.16)	135(72.97)	185(100.0)
- Secondary/Diploma/ Bachelor's Degree	0(0.00)	8(13.79)	50(86.21)	58(100.0)
<b>Total</b>	<b>9(3.70)</b>	<b>49(20.17)</b>	<b>185(76.13)</b>	<b>243(100.0)</b>
$\chi^2 = 5.371$ d.f. = 2    p-value = 0.068				

When testing the behavioral level of sample group in terms of the relationship between family income and behavioral level, it was found that there was a marginal relationship because p-value = 0.059, which was near the statistical significance at  $\alpha = 0.05$ . The sample group having high income had the higher level of behavior than the ones having less income, for instance, the sample group having income below 5,000 Baht had the high level of behavior at 69.67% whereas the sample group having income over 5,000 Baht had the high level of behavior at 82.64%.as described in Table 4.33.

**Table 4.33:** The Relationship Between Income and Behavioral Level

Personal Factor	Behavioral Level			Total
	Low	Medium	High	
Average Income of Family (n = 243)				
- Less than 5,000 Baht	6(4.92)	31(25.41)	85(69.67)	122(100.0)
- Over 5,000 Baht	3(2.48)	18(14.88)	100(82.64)	121(100.0)
<b>Total</b>	<b>9(3.70)</b>	<b>49(20.17)</b>	<b>185(76.13)</b>	<b>243(100.0)</b>
$\chi^2 = 5.661$ d.f. = 2    p-value = 0.059				



When testing the behavioral level of sample group in terms of the relationship between quantity of family members and behavioral level, it was found that there was no relationship as shown in Table 4.34.

**Table 4.34:** The Relationship Between Quantity of Family Members and Behavioral Level

Personal Factor	Behavioral Level			Total
	Low	Medium	High	
Quantity of Family Members (n = 243)				
- Less than 5 persons	8(4.37)	39(21.31)	136(74.32)	183(100.0)
- Over 5 persons	1(1.67)	10(16.67)	49(81.67)	60(100.0)
<b>Total</b>	<b>9(3.70)</b>	<b>49(20.17)</b>	<b>185(76.13)</b>	<b>243(100.0)</b>
$\chi^2 = 1.697$ d.f. = 2      p-value = 0.428				

When testing the behavioral level of sample group, in terms of the difference between knowledge level and behavioral level, it was found that the knowledge level of sample group was not different as described in Table 4.56. Additionally, when testing the behavioral level of sample group in terms of the relationship between knowledge level and behavioral level, it was found that there was no relationship as described in Table 4.35.

**Table 4.35:** The Relationship Between Knowledge Level and Behavioral Level

Knowledge Level	Behavioral Level			Total
	Low	Medium	High	
- Low	0(0.00)	5(21.74)	18(78.26)	23(100.0)
- Medium	7(6.09)	19(16.52)	89(77.39)	115(100.0)
- High	2(1.90)	25(23.81)	78(74.29)	105(100.0)
<b>Total</b>	<b>9(3.70)</b>	<b>49(20.17)</b>	<b>185(76.13)</b>	<b>243(100.0)</b>
$\chi^2 = 5.094$ d.f. = 4      p-value = 0.278				

- Conclusion of the tests of the relationship between personal factors and behavioral level

When testing the relationships between personal factors and behavioral level, it was found that age factor related to behavior with statistical significance at 0.05 (p-value = 0.009), whereas, the relationship of personal factors, in terms of educational level, average income and behavioral level might have a marginal relationship because p-value = 0.068 and p-value = 0.059, which was near the statistical significance at  $\alpha = 0.05$ .