

CHAPTER III

RESEARCH METHODOLOGY

3.1 Evaluation Approach

This research is regarded as the Evaluation Research aiming to evaluate the performance of public health leader development project in Trang province. Accordingly, the approach exploited in the evaluation covered input, process, output and outcome for all stages from the beginning to the end of the project as follows:

3.1.1 Input

- (1) Man consisted of public health officers, public health volunteers and family health leaders.
- (2) Money comprised budgets supporting the project performance and sources of support.
- (3) Materials were lecturers, supporting documents, visual audio aids, contents / knowledge, training places etc.
- (4) Management consisted of the administrative management of district public health office, public health center and operation of village level.

3.1.2 Process

- (1) The selection of family health leaders was conducted by public health officers, public health volunteers and the community leader
- (2) The training can be individual / group training through lecturing, demonstration and practices
- (3) Methods / Quantity of following – up of knowledge providing, supervision, visiting after the training of public health volunteers and public health officers
- (4) Health care procedures of family health leaders when there is a sickness occurred in their family

3.1.3 Output

- (1) Knowledge level of target group
- (2) Knowledge evaluation of target groups in terms of AIDS, hemorrhagic fever, diarrhea, diabetes, hypertension; health care of cold; fundamental health services such as family planning, Immunization for newborn to 5-year-old children; care of pregnant women; nutrition of newborn to 5-year-old children and health insurance
- (3) Test of relationship between personal factors and knowledge level of target group

3.1.4 Outcome

- (1) Behavioral level of target group
- (2) Behavioral evaluation of target group in terms of AIDS, hemorrhagic fever, diarrhea, diabetes, hypertension; health care of cold; fundamental health services such as family planning, Immunization for newborn to 5-year-old children; care of pregnant women; nutrition of newborn to 5-year-old children and health insurance
- (3) Test of relationship between personal factors and behavioral level of target group

At the beginning of the project, as there was no preparation for project evaluation and the project has been performed since five years ago, then the researcher has evaluated the input and process from existing documents, which had collected and complied by health staff. Most of the evaluation focused on output and outcome within the scope of Figure 3.1.

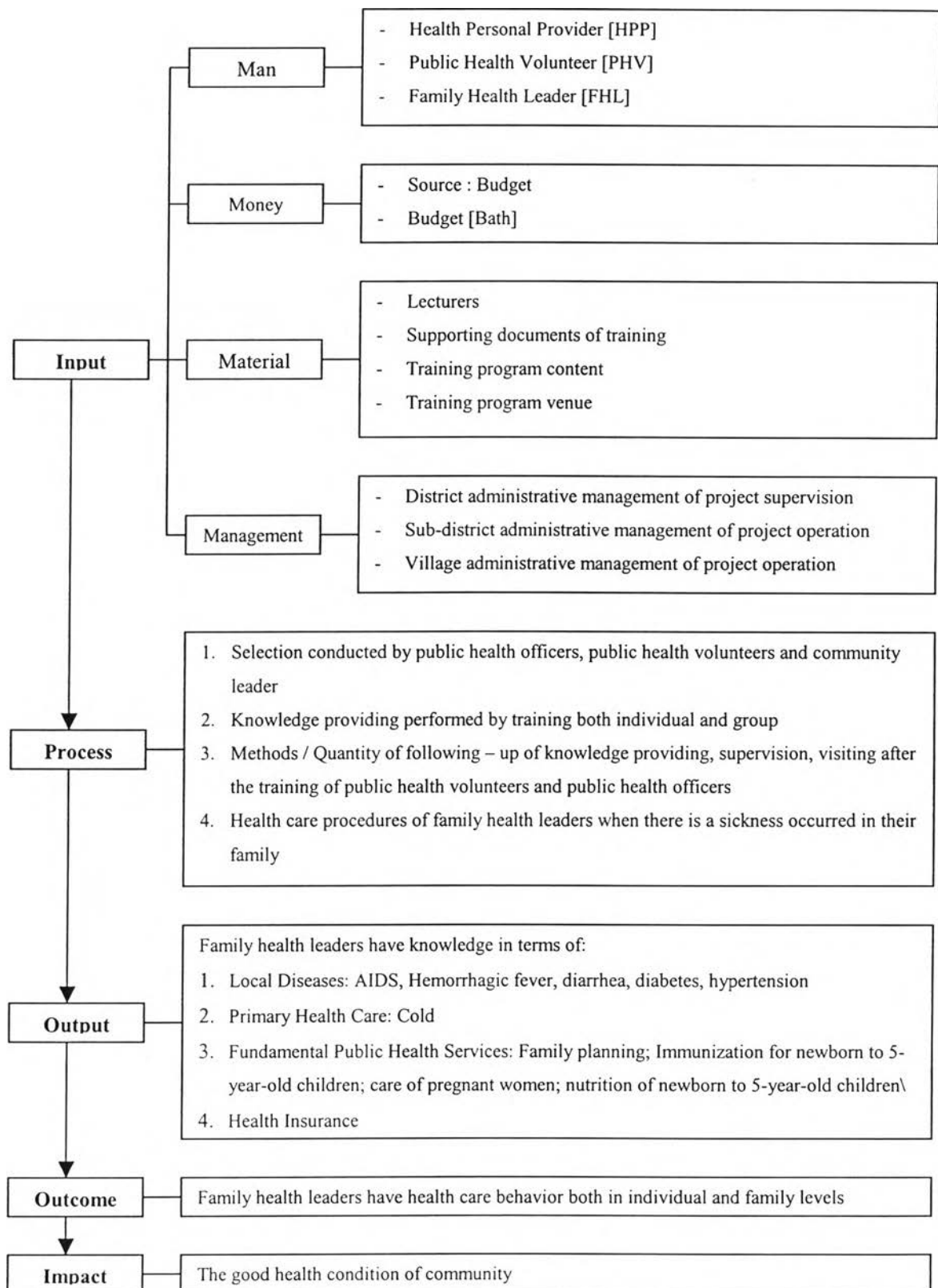


Figure 3.1: Flowchart of Evaluation Approach of Family Health Leader Development Project.

3.2 Evaluation Methodology

3.2.1 Input

3.2.1.1 Evaluation Question

Were the four inputs of the project, namely, man (public health officers, public health volunteers and family health leaders), budgets, sources (lecturers, supporting documents of training, contents, places) and the administrative management (district, sub-district and village) appropriate and sufficient for the operation of the project?

3.2.1.2 Evaluation Design

Descriptive Research

3.2.1.3 Data Collection

(1) Man

- The data in terms of quantity of public health officers, public health volunteers, community leaders and family health leaders participating in this project were collected by interviewing public health officers and compiling from relevant documentations of public health centers. All data were collected by the researcher as detailed in Appendix 2 (2.1) and would be descriptively analyzed, whereas, the documents were analyzed in terms of appropriateness and sufficiency.
- General information of public health officers having participated in the project in terms of sex, age, educational level, position of the

responsible person, years of responsibility for fundamental public health, years of operation was collected through questionnaires by the researcher as described in Appendix 2 (2.3) and would be descriptively analyzed in terms of experience and appropriateness of operation

- General information of public health volunteers having participated in the project in terms of sex, age, marital status, main occupation, educational level, average income per month, position of the village, knowledge sources of health care, quantity of family health leaders and years of having worked as public health volunteers was collected through questionnaires by the researcher as described in Appendix 3 (3.2) and would be descriptively analyzed in terms of appropriateness and sufficiency.
- General information of family health leaders having participated in the project in terms of sex, age, marital status, main occupation, educational level, average income per month, quantity of family members, alive children, position of the village, participation / non-participation in the project, years of participation in the project, knowledge sources of health care and quantity of information reception per year was collected through questionnaires by the assistant researchers, that is, public health volunteers as detailed in Appendix 4 (4.1) and would be statistically analyzed in terms of value, average and standard deviation by the computer.

- (2) **Money** consisting of budgets supported in the operation of the project and support sources was collected by interviewing public health officers and compiling from relevant documentations of public health centers. All data were collected by the researcher as detailed in Appendix 2 (2.1) and would be descriptively analyzed in terms of appropriateness and sufficiency.
- (3) **Material** consisting of lecturers, supporting documents, contents / knowledge was collected by interviewing public health officers and compiling from relevant documentations of public health centers. All data were collected by the assistant researchers as detailed in Appendix 2 (2.1) and would be analyzed in terms of contents and appropriateness of community problems
- (4) **Management** consisting of administrative management of district public health, public health centers and villages was collected by interviewing district and sub-district public health officers and compiling from relevant documentations of public health centers. All data were collected by the researcher as detailed in Appendix 2 (2.1) and would be descriptively analyzed in terms of appropriateness, readiness and distinct of the project.

3.2.2 Process

3.2.2.1 Evaluation Question

- (1) Which method was used in the selection of family health leaders?
Was it different in each year?
- (2) Which method was used in the training of family health leaders?
- (3) What was the follow – up procedure after the training? Who was followed up? Which activity or project of the village was beneficial to provide knowledge to family health leaders?
- (4) What was the health care procedure of health family leaders, in case, there is a sickness in the family? What was the level of this health care?

3.2.2.2 Evaluation Design

Qualitative Research

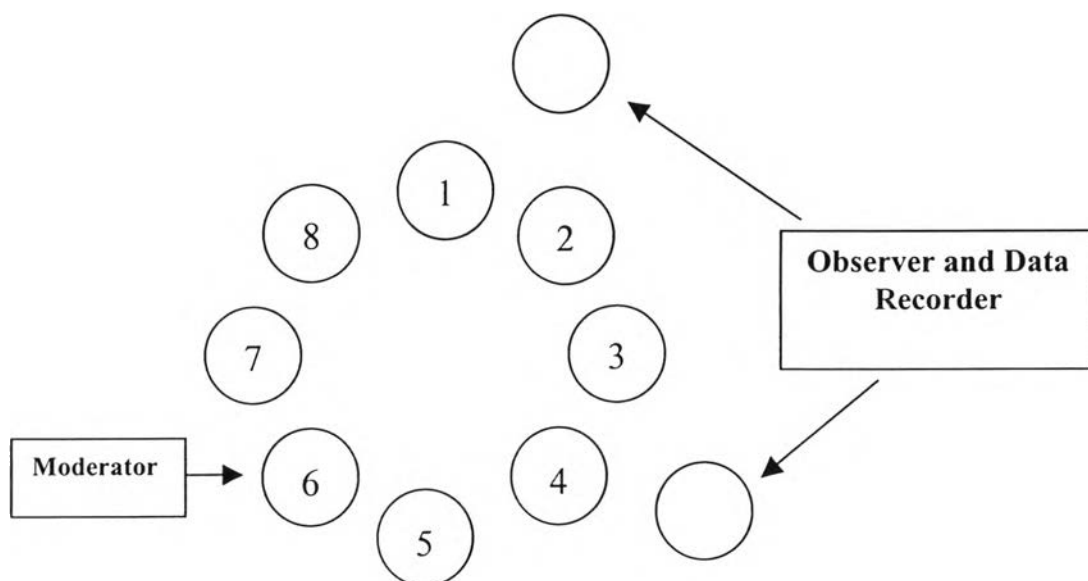
3.2.2.3 Data Collection

- (1) The data of selecting family health leaders were collected in terms of qualitative selection and the data collector by the means of interviewing public health officers as detailed in Appendix 2 (2.2). The data of public health volunteers were collected by the means of Focus Group as described in Appendix 3 (3.1). Then, the data would be descriptively analyzed and could be summarized in terms of focus group process as follows:

In the focus group process, the researcher invited relevant persons to share their ideas and summarize the selection of family health leaders of Village Number 4 consisting of seven persons, that is, headman of village, assistant headman, chairman of public health volunteer group (Village Number 4) and four public health volunteers (PHVs) sitting as the following positions:

1. The first public health volunteer sitting in the first position
2. The second public health volunteer sitting in the second position
3. The third public health volunteer sitting in the third position
4. The assistant headman sitting in the fourth position
5. The headman sitting in the fifth position
6. The fourth public health volunteer sitting in the seventh position
7. The fifth public health volunteer sitting in the eighth position

As detailed in the figure:



The focus group process was performed from 2.15 to 3.25 p.m. on 1 October 2004 at the laboratory room modified to the meeting room of Na Khao Sia Public Health Center as the following steps:

- All persons in the meeting introduced themselves (including the recorder and assistant)
- Introducing the objectives of the study and methods (namely, the objective of this focus group) taking about 1 –1.5 hours. The group members had to share opinion in five issues under the main issue of “The selection process of family health leaders” as below:
 - What are the required qualifications of family health leaders? Give opinion.
 - How is the process of selecting a family member to be trained as family health leader?
 - Is the selection of family health leader achieved the objective of the project? How?
 - In terms of developing family health leaders to have potentials that they can take care the health of their family members, what do you think about this development? What should be done to achieve this objective? (Give guidelines / suggestions)
 - What are the problems / obstacles of the potential development of family health leaders?
- There was a sound record in terms of data exploitation characteristics
- Record of position and details of participants in the focus group process

- Tell the process of group discussion (namely, rules of the meeting such as speaking one by one or raising a hand when wanting to add more ideas)
- Perform the meeting until the end
- Analyze and summarize all data descriptively

(2) The data were collected in terms of training methods both individual and group, quantities of training, details of participants and training periods by interviewing public health officers as detailed in Appendix 2 (2.2) and public health volunteers as detailed in Appendix 3 (3.1). Then the data would be analyzed descriptively, in terms of, appropriateness and sufficiency.

(3) Were there any follow- ups or providing additional knowledge after training? If so, what was such additional knowledge and how many times per year?; Who were the knowledge providers?; Were there any activity or project encouraging to provide additional knowledge to family health leaders? All data of such questions were collected by interviewing public health officers as detailed in Appendix 2 (2.2) and public health volunteers as detailed in Appendix 3 (3.1). Then the data would be analyzed descriptively in terms of appropriateness, sufficiency, quantity of subjects and follow- up supervision.

- (4) The level of health care of family health leaders when there was a sickness in the family was detailed in Appendix 5. Additionally, three family health leaders were interviewed and the data were analyzed descriptively in terms of correctness and appropriateness of family member health care.

3.2.3 Output

3.2.3.1 Evaluation Question

- (1) After being trained, what were the knowledge level of family health leaders and family health cares, in terms of, these following diseases:
 - Local Diseases: AIDS, Hemorrhagic Fever, Diarrhea, Diabetes, and Hypertension
 - Primary Sickness Care such as Cold
 - Fundamental Public Health Services such as Family Planning, Immunization for newborn to 5-year-old children, Care of Pregnant Women and Nutrition of Newborn to 5-year-old children
 - Health Insurance
- (2) After being trained, what were the level of application of knowledge by family health leaders and family health cares, in terms of, the diseases listed above:

3.2.3.2 Evaluation Design

Cross- sectional Study

3.2.3.3 Data Collection

To answer the research questions mentioned in 3.2.3.1, there were both quantitative and qualitative data collections as the following details:

(1) Quantitative Data:

The knowledge evaluation of family health leaders and family health cares was performed by questionnaires as detailed in Appendix 4 (4.2). The data of knowledge evaluation of family health leaders were then analyzed statistically, in terms of, frequency, percentage, mean and standard deviation including the inferential statistic to find out the relationship between variables, that is, personal factors of family health leaders and health cares and the knowledge level by Chi-squares (χ^2) consisting of independent variables such as sex, age, marital status, main occupation, educational level, average income of family and quantity of family members. On the other hand, dependent variable was the knowledge of local diseases in terms of AIDS, hemorrhagic fever, diarrhea, diabetes, hypertension; the primary sickness care in case of cold; the fundamental public health services, such as, family planning, Immunization for newborn to 5-year-old children; care of pregnant women and nutrition of newborn to 5-year-old children and health insurance.

Later, the knowledge evaluation of multiple choices consisting of 32 items, each correct answer received one mark. The criteria of knowledge evaluation was based on

the criteria used in the project of public health center, namely, after training if any family health leader got 80% of knowledge, such leader had high level of knowledge (from the interviews of responsible person) whereas the knowledge under 80% was divided into other two levels as described below:

1 – 59% (1 – 18 marks)	means	Low level of knowledge
60 – 79%(19 – 25 marks)	means	Medium level of knowledge
80% (26 – 32 marks)	means	High level of knowledge

(2) Qualitative Data

The knowledge evaluation, in terms of, application of family health leaders and family health cares was performed by in-depth interviews, as detailed in Appendix 5. Then, the data were analyzed qualitatively (Qualitative Data Analysis) based on the data of patients receiving services at the public health center in the period of six months (1 June to 31 December 2004). After the random selection for interviewing the knowledge level of application, there were 19 persons as listed below:

- Five local diseases:
 - AIDS: No patient in Village Number 4
 - Hemorrhagic fever: One male patient; seven years old
 - Diarrhea: Five patients consisting of 1) female patient, 52 years old 2) male patient, 6 years old 3) female patient, 47 years old 4) female patient, 24 years old and 5) female patient, 9 years old

- Diabetes: Three patients consisting of 1) male patient, 66 years old 2) female patient, 57 years old and 3) male patient, 63 years old
 - Hypertension: Four patients consisting of 1) female patient, 44 years old 2) male patient, 61 years old 3) male patient, 65 years old and 4) male patient, 70 years old
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- Primary health care in case of cold consisting of three patients, that is, 1) male patient, 7 years old 2) male patient, 42 years old and 3) female patient, 61
 - Fundamental health services, such as, family planning, immunization for newborn to 5-year-old children; care of pregnant women and nutrition of newborn to 5-year-old children. According to the random visiting of target group's households, there were questions that asked for an examination of pregnant record book, record of vaccination including weight records. In terms of family planning, the methods of birth control were asked.
 - According to the health insurance, there was random checking of health insurance card (30 Baht-Insurance-Card) when visiting households. In addition, there was a question about the application of health insurance when being sick.

3.2.4 Outcome

3.2.4.1 Evaluation Question

(1) After being trained, what were behavior levels of family health leaders and family health cares in terms of these following diseases:

- Local Diseases: AIDS, Hemorrhagic Fever, Diarrhea, Diabetes, and Hypertension
- Primary Sickness Care such as Cold
- Fundamental Public Health Services such as Family Planning, Immunization for newborn to 5-year-old children, Care of Pregnant Women and Nutrition of Newborn to 5-year-old children
- Health Insurance

(2) After being trained, what were behavior levels that translated into practice for the family health leaders and family health cares, in terms of, the diseases listed above:

3.2.4.2 Evaluation Design

Cross- sectional Study

3.2.4.3 Data Collection

To answer the research questions mentioned in 3.2.3.2, there were both quantitative and qualitative data collections as the following details:

- **Quantitative Data:**

The behavior evaluation of family health leaders and family health cares was performed by questionnaires as detailed in Appendix 4 (4.3). The data of knowledge evaluation of family health leaders were then analyzed statistically and descriptively (Descriptive Statistics) in terms of frequency, percentage, mean and standard deviation including the inferential statistic to find out the relationship between variables, that is, personal factors of family health leaders and health cares and the knowledge level by Chi-squares (χ^2) consisting of independent variables, such as, sex, age, marital status, main occupation, educational level, average income of family, quantity of family members and knowledge level. On the other hand, dependent variable was the knowledge of local diseases, in terms of, AIDS, hemorrhagic fever, diarrhea, diabetes, hypertension; the primary sickness care in case of cold; the fundamental public health services, such as, family planning, immunization for newborn to 5-year-old children; care of pregnant women and nutrition of newborn to 5-year-old children and health insurance. Then, the behavioral evaluation consisting of 17 items was translated into the following scores:

Regular Practice	3	Marks
Occasional Practice	2	Marks
Rare Practice	1	Mark
Never	0	Mark

As the 17th item of the data collection asking about the preventive behavior of AIDS by using condoms, there was no answer from the target group. Thus, the researcher deleted this information. Therefore, the behavioral evaluation by questionnaires consisted of 17 items with full score of 48 marks.

According to the behavioral evaluation, the researcher established the criteria from the project, which had been operated in the village. The objective of the training was that to let 70% of health family leaders have proper health care behavior and disease prevention. (Interviews of the project supervisor). Thus, the researcher divided the scoring into three levels as follows:

1 – 49%	(1 – 23 marks)	means	Correct / Proper Behavior
50 – 69%	(24 – 33 marks)	means	Medium Correct / Proper Behavior
70%	(34 – 48 marks)	means	Highly Correct / Proper Behavior

- **Qualitative Data**

(1) The data of behavioral evaluation of family health leaders and family health cares were collected by the means of in-dept interviewing the family members having health problems in the period of six months, as detailed in Appendix 6 (6.1 and 6.2). The data would be analyzed descriptively and concluded, in terms of, behavior as follows:

- (1.1) Behavior of Primary Health Care for cold, hemorrhagic fever, diarrhea, diabetes and hypertension
- (1.2) Behavior of Disease Prevention for cold, hemorrhagic fever and diarrhea
- (1.3) Behavior of Health Suggestion and Knowledge Providing for family members in terms of cold, hemorrhagic fever and diarrhea

(2) The data of behavioral evaluation of family health leaders and family health cares were collected by the means of disease prevention behavioral observation, as detailed in Appendix 7. Then, the data would be analyzed descriptively and concluded in terms of behavior as follows: (1) Seven items of diarrhea prevention behavior (2) Seven items of hemorrhagic fever prevention behavior (3) Seven items of fundamental service reception behavior (4) One item of health insurance behavior. As the researcher collected data by observational forms and scored practical behaviors in this behavioral evaluation, it was found that each family had different observational forms. Thus, all data could not be collected because some families did not have any factors, such as, vase, cupboard saucer as there was no cupboard, tires as only some families had cars. If the data were analyzed quantitatively, the statistical value would not be reliable. Thus, the researcher analyzed the data descriptively and qualitatively, which would be more beneficial to the research.

3.3 Study Population

In this family health leader development project, there was no preparation for data collection at the beginning of the project. Thus, the researcher had to consider only areas, which were ready in terms of information, procedures, operation and cooperation of public health officers for data collection. Accordingly, Na Yong District, Trang Province was selected due to mentioned factors.

According to the statistics of Na Yong District in terms of project operation, it was found that there was 37.7% of family health leaders. Thus, as the researcher selected to evaluate a village of Na Khao Sia Sub-district, it was estimated that there should be 40% of family health leaders considered from studying all households of selected and trained family health leaders, non-selected or non-trained family health leaders and selected but non-trained family health leaders. Na Khao Sia Sub-district consists of 10 villages with 1,820 households and 7,010 persons as described in Table3.1.

Table 3.1: Quantity of Households and Population of Na Khao Sia Sub-district, Na Yong District, Trang Province Based On Village Classification, 2003

Village No.	Name of Village	Quantity of Households	Quantity of Population (Persons)
1	Tok Wat Na Pod	203	1,062
2	Koh Pud	202	1,069
3	Na khao Sia	173	848
4	Aok Wat Na Pod	243	1,204
5	Sai Chompoo	323	613
6	Hudton	108	324
7	Thung Gae Goey	158	396
8	Huay Nui	157	442
9	Mab Bon	87	201
10	Nong Khla	166	851
	Total	1,820	7,010

Source: General Information of Public Health Office in Trang, 2002

3.4 Sampling Technique

- (1) Select only one village from ten villages by the means of Fish Bowl, that is, Village Number 4, Aok Wat Na Pod Village, Na Khao Sia Sub-district, Na Yong District, Trang Province consisting of 243 households.
- (2) The random-chosen village was Village Number 4, Na Khao Sia Sub-district, Na Yong District, Trang Province by the means of cluster sampling. The data of family health cares and family health leaders were collected from 243 households. In addition, 100% of questionnaires were sent back. At this stage, the researcher held a meeting with 17 public health volunteers. However, only 15 public health volunteers could participate in this meeting; two volunteers could not join this meeting because there was other meeting in Na Yong District. Thus, there was an appointment on another date at the home of the chairman of sub-district PHV. Details of the meetings are as follows:
 - PHV meeting of Village Number 4 participated by 17 PHVs was held at 1.00 p.m. on 10 January 2004
 - To explain the objectives of data collection and details of questionnaires
 - To appoint the date of data collection
 - To check all received questionnaires
- (3) Random for 5-10% of households having health problems in the period of six months by the means of purposive sampling, which could

establish a sampling group being able to give data in the scope of data collection. Accordingly, the researcher collected data by in-dept interviewing in terms of practical knowledge. The researcher collected the list of patients, who received health services in the last six months. After dividing patients into categories, the data were randomly chosen for application in the amount of 19 persons.

3.5 Quality Verifier of Instrument

3.5.1 Content validity: The tool of data collection was created from studying researches and relevant documents, which was discussed, improved and edited by the experts having experience and knowledge so that the content would be appropriate.

3.5.2 Reliability: The tool was tried out with 30 family health leaders, who were not in the sampling group, in the villages of district having similar performance in order to find out the value of reliability. In order to assure the correctness of the measurement in this project, the researcher tested the reliability of the tool as follows:

The researcher has tested two times. In the first try out with 32 items of knowledge evaluation tool, the value of Alfa if item deleted = 0.8235 indicating that this questionnaire was valid. In terms of 18 items of behavioral evaluation of sampling group, the value of Alfa if item deleted = 0.5798. In the second test conducted by 32 items of knowledge evaluation tool, the value of Alfa if item deleted = 0.8262

indicating that this questionnaire was valid. In terms of 18 items of behavioral evaluation of sampling group, the value of Alfa if item deleted = 0.5883. Thus, there was an adjustment to item 6, to evaluate the behavior of afternoon sleeping with hanging a mosquito curtain. When asking this question to sampling group, that is, adults doing agriculture (rubber planting), who had to get up daily at 1.00 – 2.00 a.m. to go cutting the rubber and finished the activity at 1.00 – 2.00 p.m., it was found that they would take a nap for 1-2 hours without hanging a mosquito net. However, they used a mosquito net only when sleeping at night. After discussing this point with the adviser to cancel this question, the value of second test for Alfa if item deleted = 0.710. Thus, it was regarded that this questionnaire was reliable and could be utilized in data collection as detailed in the Appendix.

Later, the researcher collected and analyzed the data by computer as the following steps:

- (1) Coding based on questionnaires
- (2) Tabulation
- (3) Statistical analysis by computer exploiting SPSS for Windows
(Statistical Package for the Social Science for Windows)