CHAPTER III

RESEARCH METHODOLOGY

Research Design

This research is a cross – sectional, descriptive study, to assess the type, of physical activity socio- demographic, predisposing factors, reinforcing factors, enabling factors and intensity of physical activities and their relationship among the FHLs, and to determine the relationship between knowledge, attitude, reinforcing factors, and enabling factors and the practice of physical activities among family health leaders. in Huaiyot District of Trang Province in southern Thailand.

Population

People in this study were family health leaders in Huaiyot District, Trang Province who had attended a seminar intended to encourage their family's members to be aware of proper health care practices. A total of 13,326 FHLs are in the Province, of which 400 were selected to be pant of this survey research.

Sample Size Calculation and Sampling Scheme

A statistical formula, (Cochran, 1983) was used to calculate the sample size on an estimated population of the Family Health Leaders, yeildiny using a total of 13,326 FHLs.

$$n = Nz^2pq / d^2 (N- 1) + z^2pq$$

N = the estimated population

n = the desired sample size

z = confidence 95 = 1.96

p = incorrect sample size 0.5

q = situation error sample size 0.5

d = the level of precision or relative error of estimation equal 0.05

Using this formula, the sample size will be as follow;

$$n = \frac{13{,}326\ (3.84)\ (0.5)\ (0.5)}{(0.0025)\ (13{,}325\ ) + (3.84)\ (0.5)\ (0.5)}$$

n = 373 cases

used 400 cases

Group Sampling

Huaiyot District is comprised of 16 tambons.

Step 1: Group sampling by drawing one village per tambon, which totaled 16 villages, with 1692 families.

Step 2: Population examples were classified by the different villages.

Step 3: Select the sample size in each village, 400/1692x number population in each village.

Tambon	Village	Total Population Family = Family Health Leader 1 person	400/1,692	Population Example = n (People)
Wangkiri	6	66	15.60	16
Thungtoe	6	78	18.43	18
Naitaw	1	188	44.44	44
Huaiyod	4	124	29.31	29
Khaokob	3	73	17.25	17
Khaokawe	1	193	45.62	46
Khaopoon	6	46	10.87	11
Thanague	7	83	19.62	20
Huanang	6	113	26.71	27
Nawong	8	86	20.33	20
Bangkung	1	95	22.45	22
Bangdee	1	106	25.05	25
Pakkom	2	145	34.27	34
Pakjam	6	87	20.56	21
Lampula	7	105	24.82	25
Nagnchanglan	8	104	24.58	25
Total				400

Data Collection Tool

The tool used for collecting data in this research were the questionnaire and interview. The questionnaire, prepared by the researcher, was divided into 6 parts as follows:

Part 1: Personal information of the family health leaders.

Part 2: The knowledge test, which is related to the familiarity of doing exercise for good health. They were multi-choice questions with 2 choices for a total of 14 sets.

Part 3: Questions about attitude test, which is related to the feelings towards doing exercise for good health. The evaluation scale created by Likert, was comprised of 5 levels: highly agree, agree, not sure, disagree, and highly disagree for a total of 9 sets.

Part 4: Questions about reinforcing factors, which had an effect on exercise for good health. They were multi-choice questions with 2 choices: the facilities for exercise in the families with total of 9 sets, the facilities for exercise in their community with total of 3 sets, the daily activities such as the working period per day for the professional work, housekeeping, hobbies, and others. It also included knowledge resource with total of 10 sets (possibly with more than one answer) and continuity of knowledge with total of 7 sets (only one answer).

Part 5: Questions about enabling factors, which had an effect on exercise for good health. They were multi-choice questions with 2 choices for a total of 10 sets.

Part 6: Questions about practices, which were related to exercise for good health. It was comprised of 2 levels: regular practice and no practice,

for a total of 16 sets. The answer of "regular practice" was divided into 3 levels for the frequency of doing their exercises: more than 3 times per week, less than 3 times per week and inconsistently. Also, the time spent on exercising was measured at 2 levels: 20-60 minutes per time and less than 20 minutes per time. People who answered to any kind of practice above could get a physical test, provided by the staff of The Division of Sport and Activity of Thailand, Trang Province.

Part 7: Questions about physical fitness were rated as follows: body weight with an average value of 47.8-58.9, percentages of body fat with an average value of 20.0-26.0, resting heart rate with an average value of 72-82, blood pressure with an average of 110-150/60-80, grip strength the average value of 15.0-23.0, back strength the average value of 31.5-78.6, legs strength the average value of 51.8-104.7, flexibility an average value of 3.0-9.0, vital capacity the average value of 965-1466 and cardiovascular endurance the average value of 23.0-35.0

Scoring Criterion

1. The test of knowledge about exercise was an assessment in which a right answer counted as 1 point, whereas a wrong answer counted as 0 points. The researcher used the scoring criterion for the knowledge test as follows:

Scoring above (Points 13-14 items) - Excellent

(Points 10 - 12 items) - Good

(Points 7- 9 items) - Average

(Points 5- 6 items) - Fair/satisfactory

(Points 0- 4 items) – Poor

2. The questions about the attitude test were related to exercise for good health. The scoring criterion was divided into 5 levels and depended on how the questions were stated.

The positive statements were scored as follows:

Choices	Points
Highly agree	5
Agree	4
Not sure	3
Disagree	2
Highly disagree	1

The negative statements were scored as follows:

Choices	Points
Highly agree	1
Agree	2
Not sure	3
Disagree	4
Highly disagree	5

The evaluation criterion for attitudes, which Best, (1970: 159) had divided as:

The average value	4.50 – 5.00	-	Excellent
	3.50 – 4.49	-	Good
	2.50 – 3.49	-	Average
	1.50 - 2.49	-	Fair/satisfactory
	1.00 – 1.49	-	Poor

3. The questions about reinforcing factors and enabling factors, in which it relied on the facts that supported the practice of physical activities were answered either true or false.

4. The questions about practices of physical activities, which were related to exercise for good health. The scoring criterion can be shown by the following:

Choices	Points
More than 3 times/week/ spent on light	
Between 15 to 60 minutes = 16 x 3	48
More than 3 times/week/ time spent on light	
Equal to, or lees than 15 minutes = 16 x 2	32
Less than 3 times/week/time spent on light	
Between 15 to 60 minutes = 16 x 1	16
Less than 3 times/week/time spent on light	
Equal to, or less than 15 minutes = 16 x 0	0

Evaluation criterion for practices defined by researcher the averages as follows:

The average value	40 - 48	-	Excellent
	30 - 39	-	Good
	16 - 29	-	Fair
	0 - 15	-	Poor

The physical test (Division of Sport and Activity of Thailand, Trang): the evaluation criterion divided into 5 levels: excellent, good, fair, poor and very poor and divided into the following categories:

Body weight

Percentage of body fat

Resting heart rate

Blood pressure

Grip strength

Back Strength

Leg Strength

Flexibility

Reaction time to light

Cardiovascular endurance/aerobic capacity

Stops of Tool Development

The researcher examined the sequences of tools as shown by the following:

1. Study previously published document and related research and adapting the information to benefit this research.

2. Study methods, procedures and tests from textbooks, documents and related researches.

3. Prepared a test, which concerned knowledge of exercise for good health with 14 questions?. The questionnaire about attitudes on exercise for good health has 9 question?, and the questionnaire about the practices of exercise for good health 16 question?.

Quality Assessment of Tool

The researcher followed the sequences as shown:

1. Asked for suggestions for the questionnaire from 5 experts who were qualified, highly experienced and worked relevantly on exercise.

2. Once the tool is valideled by the experts, it was tested for reliability with by a group of 30 individuals with similar characteristics to the study population.

3. Scored the completed questionnaires as follows:

   3.1 The test of knowledge about physical activities scored 1 point for true and 0 points for false. Then the tests were analyzed individually by the 25-percentage technique of the top group and the bottom group. Next a calculation was used to find the difficulty value (P) and the sorting value (r), in which the difficulty value would be 0.20-0.80 and the sorting value would be not less than 0.20. The result of the experiment showed that the test of knowledge, with a total of 14 sets, reached the range of the difficulty value and the sorting value by a total of 13 sets.

   3.2 The questions of attitudes about physical activity were analyzed to find the individual sorting value by the 25-percentage technique, and then the results were tested by the t-test, in which the upper value of 1.75 was taken. (Kadsingha, 1991) The result shoed that all of the 9 questions had been covered by the sorting value.

   3.3 Calculation of the reliability values for the test in 3.1 (the knowledge of physical activity) with total of 13 sets to the whole test by KR20 (Kuder- Richardson Formula 20) which consisted of a reliability value of 0.74. In addition, the attitude test for question in 3.2 with a total of 32 sets was calculated by the Alpha coefficient of Cronbach (1970), and showed the reliability value at 0.75.

Data Collection

The researcher did the data collection as shown below:

1. The researcher formally informed the district officer of Huaiyod and related offices in the community about the collaboration needed for data collection.

2. The researcher did the data collection using questionnaires in the area of the sample groups, who lived in 16 separate villages. A total of 400 questionnaires were spread out over these 16 villages, and had a return rate of 100 percent.

Study Parameters

1. Independent parameters
    - 1.1 Gender
        - 1.1.1 Male
        - 1.1.2 Female
    - 1.2 Age
        - 1.2.1 Under 20 years old
        - 1.2.2 Over 20 years old
    - 1.3 Educational level
        - 1.3.1 Primary school
        - 1.3.2 Secondary school
    - 1.4 Profession
        - 1.4.1 Agriculture
        - 1.4.2 Commerce

1.4.3 Employment

1.4.4 Housekeeping

1.4.5 Student

1.4.6 Government officer/Private sector

1.5 Marital status

1.5.1 Single

1.5.2 Married

1.5.3 Widow

1.5.4 Divorced/separated

1.6 Average income per month

1.6.1 Less than 1,800 Bath

1.6.2 More than 1,800 Bath

1.7 Predisposing factors

1.7.1 The knowledge of physical activities (True or False)

1.7.1.1 The advantages of physical activities

1.7.1.2 The physical activities

1.7.2 The attitudes of the physical activities (measured on 5 levels)

1.7.2.1 Feelings

1.7.2.2 Beliefs

1.7.2.3 Intentions

1.8 Reinforcing factors

1.8.1 The supporting tools for physical activity at home

1.8.1.1 Full support

1.8.1.2 Nearly full support

1.8.2 The supporting tools for physical activities in the community

1.8.2.1 Play ground/sport play

1.8.2.2 Health park

1.8.2.3 Ability to purchase

1.8.3 The daily practice

1.8.3.1 Working period

1.8.3.2 Housing period

1.8.3.3 Hobbies time

1.8.4 The knowledge of physical activities

1.8.4.1 Resources of knowledge

1.8.4.2 The continuity of learning

1.9 Enabling factors

1.9.1 The encouragement for exercise among family members

1.9.2 The encouragement for exercise among neighbors

1.9.3 The supports by community on exercise practicing

2. Dependent parameters: The behaviors on physical activities, classified by types of activities.

2.1 Practices

2.1.1 Types of activities

2.1.2 The frequency of activities

2.1.2.1 More than 3 times per week

2.1.2.2 Less than 3 times per week

2.1.2.3 Uncertain

2.1.3 Duration of each practices

2.1.3.1 20-60 minute

2.1.3.2 Less than 20 minutes

2.1.4 The physical test

Data Management & Analysis

In this research, the researcher analyzed data using the SPSS program, which can be shown as following:

1. Coding for all 400 questionnaires

2. Analysis of data:

   2.1 Analyzing the population data by frequency deviation and percentages and then recorded on a table.

   2.2 Analyzing data of knowledge of physical activity by frequency deviation and percentages and then recorded on a table.

   2.3 Analyzing data of attitudes on physical activity by frequency deviation and percentages and then recorded on a table.

   2.4 Analyzing data of the reinforcing factors and enabling factors on physical activity by frequency deviation and percentage and then recorded on a table.

   2.5 Analyzing data of practices on physical activity by frequency deviation and percentages and then recorded on a table.

2.6 Analyzing data of the physical examination by frequency deviation and percentage and then recorded on a table.

2.7 Analyzing data of knowledge, attitudes and practices on physical activity by the average value (X) and the standard deviation (S.D.) among group of people.

2.8 Finding the correlation coefficient between people's characteristics to knowledge, attitudes about the physical activity.

2.9 Finding the correlation coefficient between knowledge, attitudes to the practices of the physical activity.

2.10 Finding the correlation coefficient between the reinforcing factors, the enabling factors to the practices of the physical activity.

The correlation coefficients of 2.8 – 2.11 were calculated by the Phi coefficient (ϕ) relationship, which comprised of data type as (2x2). Whereas, the significant test of (ϕ) was analyzed by the formula: $X^2 = N\phi$ and found the relationship by the Pearson's Product Moment Coefficient Correlation.