



CHAPTER III

MATERIALS AND METHODS

Study Design

The study was a cross-sectional survey research study. The purpose of this study was to examine the health status and factors related to the health standing of the elderly in rural areas of Papayom District. Data were collected by means of interview questionnaires between 1 – 30 October 2004.

Population and Sample

The study population was both male and female elderly persons in rural areas of Papayom District. There were 2,945 people (Patthalung Provincial Health Office, 2003)

The researcher determined the inclusion criteria as follows:

1. Aged 60 years and above
2. Able to speak with no hearing problem
3. Willing to participate in this study
4. Able to walk and no mobility handicaps

The method of sample size determination for the population was according to Yamanae (Lugang,A., 2000), as follows:

$$n = N / 1 + Ne^2$$

When, $N =$ Known population size and equals 2,945

$n =$ Sample size

$e = 0.05$

$$\text{Instead } n = 2,945/1 + 2,945(0.05)^2$$

$n = 350$

Based on sample size calculation, the number of samples used in this study needed to be at least 350. In this study, the sample totaled 350, which was an additional 10% from the sample size calculation. Furthermore, this research studied health status, health behavior, and social support of government and private health services. Therefore, the sample size was calculated once again with first formula, and the proportion was determined from the study of Taroyamanae.

For sample selection, the researcher selected samples with two-stage random sampling (Metawekulchai, R., 2003).

Step 1. A total of 4 Tombons in Papayom District, Patthalung Province was selected. The districts were divided into two groups by geography. The researcher then used a simple random sampling technique to select representative districts. The four Tombons selected were Papayom, Banpraow, Kaotaow, and Lankoey.

Step 2. Villages were simple random sampled from the sample Tombons. The results were: Papayom Tombon; Moo 1-7, Banpraow Tombon; Moo1-10, Kaotaow Tombon; Moo1-11 and Lankoey Tombon: Moo 1-9.

Step 3. Determined the sample size for each village by proportional allocation (Metawekulchai, 2003), as follows:

$$n = \frac{N_x n}{N}$$

To get the total of 350 persons, the numbers of people in each village required were as follows:

Papayom Tombon, 86 persons from a total of 696 persons.

Banpraow Tombon, 90 persons from a total of 774 persons

Kaotaow Tombon, 107 persons from a total of 890 persons

Lankoey Tombon, 67 persons from a total of 585 persons

Table 3.1: Place and number of samples in each Tombon

Tombon	Village	Number of samples
Papayom	Moo 1-5	64
	Moo 6-7	22
Banpraow	Moo 1-5, 8	66
	Moo 6-7, 9-10	24
Kaotaow	Moo 1-5, 8, 12-13	71
	Moo 6-7, 9-11	36
Lankoey	Moo 1-5	47
	Moo 6-9	20
Total		350

Inclusion Criteria

1. Elderly people who have been living in Papayom District for 6 months.
2. Elderly people who were able to communicate with the interviewers and willing to be interviewed.

Exclusion Criteria

1. Elderly people having health problems that caused communication problems with the interviewers such as: incapable of hearing, speech impairment, mental health disorder, etc.
2. Elderly people who were not willing to be interviewed.

Ethical Consideration

The study will be done by interviewing the elderly in the community. The researcher will clarify the objective of the study. The research result will cover all of the elderly and the benefit of this study is to improve health care service.

Measurement Methods**In Quantitative Data**

Building the questionnaire for data collection from the target population consisted of 5 parts.

Part 1 Personal Characteristic and Socio-demographics

- Sex
- Age

- Religion
- Marital Status
- Education level
- Reading and writing ability
- Occupation
- Reason for not working
- Current Income
- Living Conditions
- Family relationship and communication
- Need for daily assistance
- History of the illness and cause of death of father and mother
- History of the illness and cause of death of brothers and sisters

Measurement: Closed-ended Questions

Part 2 Health Behaviors

- Perception of eating behaviors
- Perception of physical activity
- Perception of preventive behaviors
- Perception of mental support
- Perception of annual physical health check up

Table 3.2: The researcher used summated rating of R. A. Likert by 3 levels as follows:

Activity	Level	Criteria
Regularly	1	Everyday
Sometime	2	2-3 times per week
Never	3	< once per week

The possible scores for the scale ranged from 0-75. Classification according to severity level was in 3 levels, as follows:

- 0-25 points refers to low score (Low)
- 26-50 points refers to intermediate initial score (Moderate)
- 51-75 points refers to initial high score (High)

Part 3 Social Support

- Perception of material support
- Perception of travel support
- Perception of home working support
- Perception of mental health support
- Perception of physical support
- Perception of information support
- Perception of social support

The total possible scores for the scale ranged from 0-30, classified according to severity level in 3 levels as follows:

- 0-10 points refers to low score (Low)
- 11-20 points refers to intermediate initial score (Moderate)
- 21-30 points refers to initial high score (High)

Part 4 Accessibility of health services

- Main health service
- Other health services
- Costs of traveling to the health care center
- Distance
- Time to travel to center
- Convenience
- Signs & symptoms
- Payments for treatment
- Sickness level
- Satisfaction (patient's feelings about the service)

Measurement: Closed-ended Questions

Part 5 Health Status

This part of the instrument was health status, which was measured with 18 items, consisting of questions. The scoring was as follows:

- | | |
|-------------------------------------|-----------|
| - Perception of health level | score 0-3 |
| - Perception of family support | score 0-1 |
| - Perception of social activity | score 0-1 |
| - Perception of mental health | score 0-1 |
| - Perception of physical activity | score 0-1 |
| - Perception of information support | score 0-1 |
| - Perception of teeth use | score 0-1 |
| - Perception of toilet use | score 0-1 |

- Perception in environment score 0-1
- Perception in security score 0-1
- Perception in visual score 0-1
- Perception in hearing score 0-1
- Perception in eye contact score 0-1
- Perception in bowels score 0-1
- Perception in bladder score 0-1
- Perception in sleeping score 0-1
- Perception in illness score 0-1
- Perception in Basal metabolic Index (BMI) score 0-1

The total possible scores for the scale ranged from 0-21. Classification according to severity level was in 3 levels as follows:

- 0-7 points refers to low score (Low)
- 8-15 points refers to intermediate initial score (Moderate)
- 16-21 points refers to initial high score (High)

Assessing the Quality of Instrument

1. Content Validity

The interview questionnaire was reviewed by the following 4 instrument experts for meaning, clarity and linguistics.

- 1). Associate Professor Ong-arj Viputsiri, Department of Public Health Doctor, Faculty of Public Health. Chulalongkorn University.
- 2). Associate Professor Sathirakorn Pong Associate Professorpanich, Faculty of Public Health. Chulalongkorn University.

- 3). Associate Professor Vandee Pokakul, Department of Public Health
Doctor, Faculty of Geriatric Medicine. Ministry of Public Health.
- 4). Associate Professor Valaikanya Plasai, Department of Public Health,
Faculty of Public Health. Chulalongkorn University.

2. Reliability

The interview questionnaires were pre-tested among 40 elderly people in rural areas who had the same characteristics as the selected population. The reliability of the questionnaires was calculated by using Cronbach's alpha coefficient. Each scale's reliability value was follows:

- 1). Health behaviors, Alpha coefficient value of 0.69
- 2). Social support, Alpha coefficient value of 0.72
- 3). Health status, Alpha coefficient value of 0.79

3. Data collection

- 1). The researcher submitted letters of request from the Dean of Faculty of Graduate Studies, Chulalongkorn University, to the Directors of the Provincial Health Office in Patthalung Province and the director of Community Hospitals and the Directors of the District Health Offices for permission to collect the data.
- 2). The researcher described the objectives, the characteristics of the sample, clarified the meaning of all the interview questions and the steps of data collection to the research assistants.

- 3). The researcher contacted and coordinated with the chiefs of the health centers or health officers in hospitals, community leaders and village health volunteers to find out the addresses of the respondents.
- 4). The researcher and the assistance researcher collected the data from the respondents in each village by interviewing them at the respondents' homes. The researcher checked for completeness of the questionnaires after the interview.
- 5). Data collection continued until the information from 350 cases was obtained. The questionnaires were then verified for data analysis.

4. Data analysis

After reviewing for completeness, the data were encoded and processed for statistical analysis using SPSS/PC⁺. The data analysis were performed as follows:

- 1). Descriptive statistics: demographic characteristics and other background information of the respondents using frequency, percentage, mean and standard deviation.
- 2). Analysis statistics: chi-square analysis was used to account for the factors related to health status.

Because of the associated factors with health status analysis, the independent variables are interval scale, ratio scale or ordinal variable and the dependent variables are dichotomous variables, so, this study used dummy variables, as follows:

Dependent Variables: Health status: Perception of health;

Score level: normal =1, abnormal =0

Independent Variables:

1. Socio-Demographic factors

- 1.1 Gender; male =1 female =2
- 1.2 Age; 60-69 years =1, 70-79 =2, 80 years and above = 3
- 1.3 Religion; Buddhist =1, Islam = 2, Christian =3
- 1.4 Marital status; single =1, married =2, separated =3, widowed/divorced=4
- 1.5 Education level; No formal education =1, primary school = 2, secondary school =3, vocational school = 4, Bachelor's Degree or higher = 5
- 1.6 Reading and writing ability; Can read and write well=1, Can read but can't write=2, Can read and write a little=3, Cannot read or write=4, Present employment
- 1.7 Present employment (occupation); Agriculture=1, Laborer=2, Self employed=3, Employee private company=4, Government or State Enterprise=5
- 1.8 Reason for not working; Health problems=1, Age=2, Children's decision=3, No work availability=4
- 1.9 Current Income; No=1, Yes=2
- Source of Income; Children=1, Savings=2, Salary=3, Spouse=4, Parent=5
- 1.10 Caregiver; Alone=1, Spouse or children=2, Relatives=3,
- 1.11 Family relationship; Live happily together=1, Live together but don't associate=2, Live together but have problems
- 1.12 Need for daily assistance; No=1, Yes=2
- 1.13 Age of parents at death and cause of death

2. Health behavior;

High correct perception = 3

Moderate correct perception = 2

Low correct perception =1

3. Social support;

High correct perception = 3

Moderate correct perception = 2

Low correct perception =1

4. Medical accessibility (accessibility of services)

4.1 Ill during past three months; yes = 1, no = 2

4.2 Symptoms, service, and services received

4.3 Name of health Facility

4.4 Method of Payment

4.5 Level of Illness

4.6 Mode of transportation to health care facility

4.7 Time spent traveling to and from center

4.8 Cost of traveling

4.9 Health care expectations fulfilled

4.10 First choice of health care facility when mildly ill

4.11 First choice of health care facility when severely ill

5. Health Status

- 5.1 Your health today
- 5.2 Asked for help from family or community
- 5.3 Family close knit
- 5.4 Participate in social activities or functions
- 5.5 Walk and balance
- 5.6 Care for yourself without family help
- 5.7 Eating and chewing ability
- 5.8 Availability and use of toilet
- 5.9 Home living conditions
- 5.10 Mental health status
- 5.11 Healthy surroundings
- 5.12 Have noisy, dusty smelly surroundings
- 5.13 Problems with eyesight
- 5.14 Regular bowel movements
- 5.15 Regularly urinate
- 5.16 Normal hearing
- 5.17 Sleep well at night
- 5.18 Have any chronic diseases
- 5.19 BMI weight, height