

## CHAPTER 3

### METHODOLOGY

#### **Design of the study**

This analytical descriptive study was designed to explore the level of cognitive status and the relationship between selected factors and cognitive status among the elderly in Natawee District, Songkhla Province.

#### **Population, sample, and sampling**

##### **Population**

The study population was elderly persons aged 65 years or older, living in Natawee District, Songkhla Province, Thailand. The total population of elders with this ages in Natawee District was 2,660.

##### **Samples**

The sample size for this study was calculated using Thordike's equation to reach an adequate power for regression analysis (Thordike's 1978 cited by Prescott, 1987).

Sample size = 50 + (10 x number of independent variables)

In this study, the researcher planned to include 12 independent variables including: age, gender, income, location of residence, marital status, education, chronic illness, basic activities of daily living, instrumental daily living activity, drug, depression, and religion. Therefore, an appropriate sample size was 170 elders.

However, the last three variables were excluded from analysis of data for the following reasons:

1. Drug use - There was no data because the elders did not know the drugs' names which they were taking.
2. Basic activities of daily living - Within the sample, there was no variation in basic activities of daily living.
3. Religion – No report indicates the relationship between religion and cognitive decline.

### **Sampling**

#### Sampling method

A multistage sampling technique was used in recruiting 170 elderly out of 2,660 persons. The steps were as follows:

1) Two sub-districts were selected from 17 sub-districts of Natawee District, using the simple random technique. They were Natawee and Chongclay sub-districts.

2) Within the 2 selected sub-districts, there were 18 villages. The researcher selected 3 villages from each sub-district. Therefore 6 villages were identified as research settings, with a total elderly population of 542.

3) The researcher examined name lists of the elderly living in these 6 villages. The numbers of the elderly from each village to be included in the study were estimated, based on the total number of elders in that village.

#### Natawee

$$\text{village \#1 } N = 170 \times 309/542 = 97$$

$$\text{village \#7 } N = 170 \times 46/542 = 14$$

$$\text{village \#9 } N = 170 \times 20/542 = 6$$

### Chongclay

village #1  $N= 170 \times 67/542 = 21$

village #2  $N= 170 \times 88/542 = 28$

village #5  $N= 170 \times 12/542 = 4$

4) The elders in the selected villages who met the following inclusion criteria were approached to participate in the study:

1. Age 65 years or over.
2. Able to communicate in Thai.
3. No obvious hearing or vision impairment.

**Instruments:** Questionnaires exploring personal and health data, Chula Mental Test., Geriatric Depression Scale, and Chula ADL Index were tools used in data collection.

Personal and health questionnaires sought data on age, gender, marital status, educational level, occupation, personal income, individual disease, medications used regularly, and number of family members living in the same household.

Chula Mental Test was modified from MMSE (Jitapunkul, 1998). It consists of 16 items and yields a total possible score of 0-19; a score below 15 indicates abnormal mental status. This instrument ascertains perception, memory, attention, language, and recall.

Thai Geriatric Depression Scale (short version) consists of 5 components: emotion, negative will, psychomotor, cognitive, and isolation (Jitapunkul et al., 1994). With 15 items, the responses to the items yield a possible score of 0-15; a score of 6 or over indicates depression. This cutoff point was recommended by the Research Unit of the Royal College of Physician and the British Geriatrics Society, 1992;

Brink, Yesavage, Lum, Heersema, Adey, Rose, 1982. In Thailand, the cutoff point was a score of 6 or over indicates depression (Jitapunkul et al., 1994).

Chula IADL Index has 5 items measuring more advanced daily living activity. It assesses the elderly's abilities in walking outdoors, cooking, doing housework, conducting money transactions, and using public transport. The responses to these items yield a total possible score of 0-9. A higher score indicates more activities (Jitapunkul, 1998).

### *Appropriateness and reliability of the instruments*

Appropriateness of the instruments: The Chula Mental test (CMT), Chula ADL Index, and the Geriatric Depression Scale were evaluated by 3 experts. They agreed that these three instruments were appropriate for this study.

Reliability: The three instruments were tested for reliability in 20 elders using Cronbach's alpha coefficient. The reliability of the Chula Mental Test (CMT) was .79, the Chula ADL Index was .83, and the Thai Geriatric Depression Scale was .80.

### **Data collection procedure**

Data collection was carried out by the following procedures:

1. The researcher obtained permission from the Director of the Provincial Department of Public Health, Songkhla for data collection.
2. The researcher met the elderly at their homes in selected villages. Those who met the inclusion criteria were approached to participate in the study. The researcher explained the objectives of interviews to the elderly or family members to obtain consent. After the elders gave their consent, the researcher and researcher assistants interviewed the elders using the questionnaires. At the end of each

interview, the researcher verified the completeness and accuracy of data with the family members.

### ***Protection of human rights***

Prior to data collection, the prospective subjects were informed about the purposes and methods of the study. They were assured that they had a right to refuse or withdraw from the study at any time. Prospective subjects were notified that their responses would be kept confidential and their identities would not be revealed. Lastly, the prospective subjects who agreed to participate in the study gave their verbal consent.

### **Analysis of data**

The data was analyzed by using SPSS PC (Statistical Package for Social Science). The following statistics were used:

1. Descriptive statistics were used to describe the distribution of the subjects' demographic characteristics such as age, gender, income, education, location of residence, and marital status. Health-related factors such as chronic illness, instrumental daily living activity, and depression were used to describe the distribution of the subjects by using descriptive statistics.

2. Crude odd ratios and chi-squares ascertaining the associations of selected factors with cognitive status were computed from cross-tab tables.