

## CHAPTER III

### METHODS AND MATERIALS

#### 3.1 Research design

This study was a cross-sectional survey research study. The purpose of this study was to assess the quality of life and the important factors affecting quality of life of the elderly in Srisamrong District, Sukhothai Province. Data were collected by means of interview questionnaires conducted from 3 March 2006 to 16 April 2006.

#### 3.2 Population

The study population was both male and female elderly persons who had been living in Srisamrong District, Sukhothai Province, for more than one year. There were 10,880 elderly people (Srisangworn Hospital Information Center, 2006). The researcher determined the inclusion criteria as follows:

1. Age 60 years and above
2. Able to speak with no hearing problem
3. Willing to participate in this study

#### 3.3 Sample size

The sample was determined using the formula proposed by Yamane (Lugang, A., 2000) as follows:

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

When  $n$  = sample size

$N$  = the elderly people in Srisamrong District, equaling 10,880

$e$  = the level of precision or relative error of estimation, equal to 0.05

Based on this formula, the sample size was as follows:

$$n = 10,880 / (1 + (10,880(0.05)^2))$$

$$n = 386$$

Also, an additional 10% was needed in case of loss of sample. Therefore, the total number of sample was 424.

### 3.4 Sampling technique

#### 3.4.1 Sampling Technique: Probability Sampling

Step 1: District level: Stratified random sampling was used to select all Sub-Districts (13 Sub Districts).

Step 2: Sub-District level: Simple random sampling was used for all villages in each Sub-District based on population proportion.

**Table 3.1: Place and number of sample in each Sub district or Tambon**

Sub-District or Tambon	Total population	Population proportion	Sample Selected
Klongtan	1,561	14.35	61
Wanglueg	922	8.47	36
Samreun	1,211	11.13	47
Banna	399	3.67	16
Wangthong	644	5.92	25
Na-khunkrai	618	5.68	24
Kore-taliang	1,062	9.76	41
Watkore	728	6.69	28
Banrai	802	7.37	31
Tup-phueng	1,287	11.83	50
Bansan	596	5.48	23
Wangyai	534	4.91	21
Raowtonjun	516	4.74	20
Total	10,880	100	424

### 3.5 Research variables and measurement instruments

The questionnaire was developed from a review of related theories and conceptual and research. The interview schedule consisted of six parts as follows:

**Table 3.2: Independent Variables of Part 1 of the Instrument**

Conceptual variables	Operational variables	Measurement scale	Level of measurement	Measurement methods
Part 1				
Socio-demographic factors	Gender	Nominal	2 scale	Questionnaire
	Age	Ratio	In year	"
	Marital status	Nominal	6 scale	"
	Education level	Ordinal	4 scale	"
	Literacy	Nominal	4 scale	"
	Occupation	Nominal	6 scale	"
	Reason for not working	Nominal	5 scale	"
	Current income	Ratio	2 scale	"
	Living arrangement	Nominal	4 scale	"
Illness condition	Nominal	2 scale	"	

Part1 consisted of questions to elicit information regarding socio-demographic factors, including, open-ended and multiple-choices question.

**Table 3.3: Independent Variables of Part 2 of the Instrument**

Conceptual variables	Operational variables	Measurement scale	Level of measurement	Measurement methods
Part 2				
Predisposing factors	Health status perception	Ordinal	3 scale	Questionnaire

Part2 consisted of five regarding health status perception. Each of these five items was arranged in a three-point rating scale, ranging from 3 (agree) to 2 (not sure) to 1 (disagree). The total scores ranged from 5 to 15 points. According to Bloom (1975, cited in Hunkittikul, S. 1996: 72, health perception is classified as follows:

Highly perceived health status	= 13 and over	(80% and above)
Moderately perceived health status	= 11-12	(60-79%)
Low perceived health status	= less than 11	(lower than 60%)

**Table 3.4: Independent Variables of Part 3 of the Instrument**

Conceptual variables	Operational variables	Measurement scale	Level of measurement	Measurement methods
Part 3				
Enabling factors	The availability of elderly clubs	Nominal	2 and 3 scale	Questionnaire
	The accessibility to health services	Nominal	2 and 3 scale	”
	The satisfaction with health services	Nominal	2 scale	”

Part3 consisted of questions on enabling factors related to health promoting behaviors in three sections.

Section 1: The questions were concerned with the availability of community elderly clubs and their membership and accessibility to the club activities. They were the multiple-choice questions. Possible total scores ranged from 3 to 9 points According to Blooms (1975, cited in Hunkittikul, S, 1996: 72), health perception is classified as follows:

Highly perceived health status	= 8-9	(80 % and above)
Moderately perceived health status	= 7	(60-79%)
Low perceived health status	= lower than 7	(lower than 60%)

Section 2: The questions were concerned with the accessibility to health services and use of health services including the open-ended and multiple choice questions. Total scores ranged from 7 to 21. According to Blooms (1975, cited in Hunkittikul, S, 1996: 72), principle health perception is classified as follows:

Highly perceived health status	= 19-21	(80 % and above)
Moderately perceived health status	= 16-18	(60-79%)
Low perceived health status	= lower than 16	(lower than 60%)

Section 3: The statements were concerned with satisfaction with health services. Each of these five items was arranged in a three-point rating scale, ranging from 3 (agree) to 2 (not sure) to 1 (disagree). The total scores ranged from 5 to 15 points. According to Bloom (1975, cited in Hunkittikul, S, 1996: 72, health perception is classified as follows:

Highly perceived health status	= 8-9	(80 % and above)
Moderately perceived health status	= 7	(60-79 %)
Low perceived health status	= lower than 7	(lower than 60%)

**Table 3.5: Independent Variables of Part 4 of the Instrument**

Conceptual variables	Operational variables	Measurement scale	Level of measurement	Measurement methods
Part 4				
Reinforcing factors	Social support	Ordinal	3-point scale	Questionnaire
	Access to health promotion	Nominal	5-point scale	”
	Information			

Part 4 consisted of questions about reinforcing factors related to health promoting behaviors in two sections.

Section 1: The questions were concerned with social support from members, neighborhood, and health promoting personnel. Each item was arranged on a three-point scale: 3 = regular support, 2 = occasional support, and 1 = no support.

Section 2: The questions were concerned with health promoting information attainment from mass media. They were multiple-choice questions.

**Table 3.6: Independent Variables of Part 5 of the Instrument**

Conceptual variables	Operational variables	Measurement scale	Level of measurement	Measurement methods
Part 5				
Health promoting behaviors	Non-alcohol drinking	Nominal	2 scale	Questionnaire
	Non-smoking	Nominal	2 scale	”
	Annual physical examination	Nominal	2 scale	”
	Nutritional practice	Ordinal	3 scale	”
	Exercise	Ordinal	3 scale	”
	Safety practice	Ordinal	3 scale	”
	Housing sanitation	Ordinal	3 scale	”
	Social interaction	Ordinal	3 scale	”
	Stress management	Ordinal	3 scale	”

Part5 consisted of questions about health promoting behaviors based on the conceptual framework and research objectives. They were divided into two sections including nine components.

Section 1: There were three questions regarding non-alcohol drinking, non-smoking, and annual physical examination arranged in a dichotomous type, three points for the positive answers and 0 point for negative answers.

Section 2: There were 34 questions regarding nutritional practice, exercise, safety practice, housing sanitation, social interaction, and stress management. Each of the items was arranged in a three point rating scale: 3 = regular practice, 2 = rare practice, and 1 = no practice.

The possible total scores for the two sections were 37-111. Based on Pender's categorization, (1987: 326-331, cited in Hunkittikul, S. 1996: 74) practice of health promoting behavior was classified as follows:

Good practice	=	93 and above	(75 % and above)
Fair practice	=	78-92	(55-74 %)
Poor practice	=	lower than 78	(lower than 55 %)

**Table 3.7: Dependent Variables of Part 6 of the Instrument**

Conceptual variables	Operational variables	Measurement scale	Level of measurement	Measurement methods
Part 6				
Quality of life:				
Physical health factors	Activity of daily living	Ratio	5 scale	Questionnaire
	Dependence on medical substances and medical aids	Ratio	5 scale	”
	Mobility	Ratio	5 scale	”
	Energy and fatigue	Ratio	5 scale	”
	Pain and discomfort	Ratio	5 scale	”
	Sleep and rest	Ratio	5 scale	”
	Work capacity	Ratio	5 scale	”
Psychological factors	Bodily image and appearance	Ratio	5 scale	”
	Negative feeling	Ratio	5 scale	”
	Positive feeling	Ratio	5 scale	”
	Self-esteem	Ratio	5 scale	”
	Spiritual/religion/ personal beliefs	Ratio	5 scale	”
	Thinking learning, memory, and concentration	Ratio	5 scale	”
Social relationship factors	Personal relationship	Ratio	5 scale	”
	Social support	Ratio	5 scale	”
	Sexual activity	Ratio	5 scale	”
Environment factors	Financial resource	Ratio	5 scale	”
	Freedom, physical safety and security	Ratio	5 scale	”
	Health and social care	Ratio	5 scale	”
	Home environment	Ratio	5 scale	”

**Table 3.7: Dependent Variables of Part 6 of the Instrument (Cont.)**

Conceptual variables	Operational variables	Measurement scale	Level of measurement	Measurement methods
	Opportunity to acquire new information and skills	Ratio	5 scale	Questionnaire
	Participation in and opportunity for creation	Ratio	5 scale	”
	Physical environment	Ratio	5 scale	”
	Transport	Ratio	5 scale	”

Part6: QOL was measured by a short form Quality of Life World Health Organization Instrument (WHOQOL-BREF) containing four domains totaling 24 topics, and other two topics for overall quality of life and general health facets as follows:

Physical health factors regarded the facets incorporated within seven topics including activity of daily living, dependence on medical substance and medical aids, mobility, energy and fatigue, pain and discomfort, sleep and rest, and work capacity.

Psychological factors regarded the facets incorporated within six topics including bodily image and appearance, negative feelings, positive feelings, self-esteem, spiritual/religion/personal beliefs, and thinking/learning/memory and concentration.

Social relationship factors regarded the facets incorporated within three topics including personal relationship, social support, and sexual support

Environment factors regarded the facets incorporated within eight topics including financial resource, freedom/physical safety and security, health and social care, home environment, opportunity to acquire new information and skills, participation in and opportunity for recreation, physical environment, and transport.

WHOQOL-BREF is available in 19 different languages and has already been translated into the Thai language. As for the Thai version, Cronbach's alpha coefficient revealed that its reliability was 0.84 and its validity was 0.65 (Mental Health Division, MOPH, 1996). Each question was ranged in a five-point rating scale asking the respondents to indicate their degree of agreement.



The scoring of positive questions was as follows:

Degree of agreement	Score
Not at all	1 point
A little	2 points
Moderately	3 points
Mostly	4 points
Completely	5 points

The scoring of negative questions was as follows:

Degree of agreement	Score
Not at all	5 points
A little	4 points
Moderately	3 points
Mostly	2 points
Completely	1 point

For these 26 questions, the possible scores ranged between 26 and 130 points.

The QOL was then determined by dividing the scores into three groups as follows:

QOL	Low	Moderate	High
1. Physical health	7-16	17-26	27-35
2. Psychological	6-14	15-22	23-30
3. Social relationship	3-7	8-11	12-15
4. Environment	8-18	19-29	30-40
Total scores	26-60	61-95	96-130

### **3.6 Quality assessment of the instrument**

The researcher proceeded in the following sequences to ensure the validity of the research instrument.

1. The questionnaires were adopted from Poolkasorn, N. (2002) and Sriruksa, P.(2001).

2. Once the questionnaire was validated by the experts, they were pre-tested among 30 elderly people in Sukhothai Province 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 was as follows:

- 2.1 Health promoting behaviors: Alpha coefficient value = 0.9497

- 2.2 Quality of life: Alpha coefficient value = 0.9376

### **3.7 Data collection**

The data collection process of this research was conducted as follows:

1. The researcher submitted letters of request from the Dean of the College of Public Health, Chulalongkorn University, to the Director of the Provincial Health Office in Sukhothai Province, the Director of Srisangworn Hospital, and the Director of the District Health Office for permission to collect data.

2. The researcher contacted and coordinated with the Chiefs of the Health Center or health officers in the hospital, community leaders, and village health volunteers to find out the addresses of the respondents.

3. The researcher collected the data from the respondents in each Sub-District by interviewing them at the respondents' homes. The researcher checked the completeness of the questionnaires after each interview.

4. Data collection continued until the information from 398 cases was obtained. The questionnaires were then verified for data analysis.

### **3.8 Data management**

1. The questionnaires were checked and decoded in the field. When the questionnaire was not complete, it was necessary to repeat the interview with the same respondent.

2. The data were entered into the SPSS program and checked by double entry technique: using two people to enter the same data into the SPSS program in two computers at the same time.

### **3.9 Data analysis**

After reviewing the data for completeness, the data were then encoded and processed for statistical analysis using SPSS version 11. Data analysis was performed as follows:

1. Descriptive statistics of frequency, percentage, mean, and standard deviation were calculated to analyze data regarding socio-demographic, as well as predisposing, enabling, and reinforcing variables.

2. Analysis statistics

Multiple regression analysis was performed to analyze the relationship between the important factors (socio-demographic, predisposing, enabling, and reinforcing factors) and health promoting behaviors and the relationship between health promoting behaviors and quality of life.

### **3.10 Limitations**

1. This study employed a cross-sectional design to identify the relationship between the important factors and health promoting behaviors, as well as to identify the relationship between health promoting behaviors and quality of life. This study did not attempt to specify the real impact of health promoting behaviors on quality of life.

2. The study may be influenced by interviewer bias from using one interviewer who was a health worker and had been working in Srisamrong District, Sukhothai Province.

3. The study may be influenced by sensitive question bias because some questions asked about satisfaction with sexuality.