CHAPTER IV

RESEARCH RESULTS

A cross-sectional study investigating health promoting behaviors and quality of life among the elderly in Srisamrong District, Sukhothai Province was conducted between March 1, 2006 and April 18, 2006. The objective of this survey research was to study the quality of life and health promoting behaviors of the elderly and the factors related to health promoting behaviors. The sample was Thai elderly, aged 60 years or older, who lived in their household and could communicate through speaking and listening. Stratified random sampling was used to obtain 386 subjects. Data were collected by one interviewer who interviewed a total of 398 subjects, using the questionnaires developed by the researcher. Statistical analysis using frequency, means, standard deviation, and multiple regression were applied.

In this chapter, the study results are reported in eight parts as follows:

Part 1: Socio-demographic characteristics of the sample

Part 2: The findings regarding predisposing factors

Part 3: The findings regarding enabling factors

Part 4: The findings regarding reinforcing factors

Part 5: The findings regarding health promoting behaviors

Part 6: The findings regarding quality of life

Part 7: The findings regarding factors relating to health promoting behaviors

Part 8: The findings regarding health promoting behaviors related to quality of life

Part 1: Socio-demographic characteristics of the samples

The largest groups of the elderly were female (63.6%), aged between 65 and 69 years (28.6%), married (59.0%), graduated from primary school (83.2%), could read and write well (67.3%), were unemployed (55.3%), had income less than or

equal to 1,000 baht per month (44.2%), lived with spouse or children (78.6%), and had illness conditions (56.3%). The results were shown in Table 4.1.

Table 4.1: Number and percentage of the elderly by socio-demographic characteristics (n = 398)

Socio-demographic characteristics	N	(%)
Gender		
Male	145	(36.4)
Female	253	(63.6)
Age (years)		
60-64	109	(27.4)
65-69	114	(28.6)
70-74	97	(24.4)
75-79	56	(14.1)
80	22	(5.5)
$\bar{X}$ = 69; SD = 6.07; Minimum = 60; Maximum = 91		
Marital status		
Single	19	(4.8)
Married	235	(59.0)
Widowed	136	(34.2)
Divorced	1	(0.3)
Separated	7	(1.8)
Education level		
No formal education	36	(9.0)
Primary school	331	(83.2)
High school	15	(3.8)
Bachelor's degree or higher	16	(4.0)
Literacy		
Could read and write well	268	(67.3)
Could read and write a little	67	(16.8)
Could read but could not write	19	(4.8)
Could not read and write	44	(11.1)

Table 4.1: Number and percentage of the elderly by socio-demographic characteristics (n = 398) (Cont.)

Socio-demographic characteristics	N	(%)
Occupation		
Unemployed	220	(55.3)
Agriculturist	102	(25.6)
Laborer	38	(9.5)
Self-employed	38	(9.5)
Current income (Baht per month)		
0-1,000	176	(44.2)
1,001-2,000	118	(29.6)
> 2,000	104	(26.1)
$\bar{X}$ = 2,598.89; SD = 4,104.37; Minimum = 50; Maximum = 30,000		
Living arrangement		
Alone	48	(12.1)
Spouse or children	313	(78.6)
Relatives	33	(8.3)
Others	4	(1.0)
Illness condition		
Ill	224	(56.3)
Healthy	174	(43.7)

Part 2: The findings regarding predisposing factors

In assessing predisposing factors that were related to health promoting behaviors among the elderly, the respondents perceptions of health status both at present and future were asked. Table 4.2 showed that 45.7% of the elderly reported having health status perception in a high level, 29.9% at a low level, and 24.4% at a moderate level, respectively.

Table 4.2: Number and percentage of the elderly by the level of predisposing factors related health promoting behaviors

Predisposing factors	Level of perception					
	High		Moderate		Low	
	N	(%)	N	(%)	N	(%)
Health status perception (Total)	182	(45.7)	97	(24.4)	119	(29.9)
Present	191	(48.0)	103	(25.9)	104	(26.1)
Future	66	(16.6)	227	(57.0)	105	(26.4)

Part 3: The findings regarding enabling factors

The enabling factors that influenced health promoting behaviors included the use of health service centers, the to health services center, distance to health service center, time for transportation to health service centers, cost of transportation, and place of health service used (hospitals, health centers, or private clinics). The largest group of the elderly often went to health service centers (47.2%), found that going to health services center was easy (89.4%), lived close to health service centers (less than one kilometer) (58.5%), spent only a short time on transportation (91.5%), had low cost of transportation (97.2%), and used health centers for health services (65.6%). The results were shown in Table 4.3.

Table 4.3: Number and percentage of the elderly by accessibility to health services (n = 398)

Accessibility to health services	N	%
Use of health services centers		
Often	188	(47.2)
Sometimes	178	(44.7)
None	32	(8.1)
Accessibility to health services centers		
Easy	356	(89.4)
Difficult	42	(10.6)
Distance to health services centers		
< 1 kilometer	233	(58.5)
1-2 kilometers	88	(22.1)
> 2 kilometers	77	(19.4)
$\bar{X}$ = 1.52; SD = 1.48; Minimum = 0.01; Maximum = 12		
Time for transportation		
Short	364	(91.5)
Long	34	(8.5)
Cost of transportation		
Low	387	(97.2)
High	11	(2.8)
Place of health service used		
Hospital		
- 1st place	99	(24.9)
- 2nd place	248	(62.3)
- 3rd place	51	(12.8)
Health Center		
- 1st place	261	(65.6)
- 2nd place	90	(22.6)
- 3rd place	47	(11.8)

Table 4.3: Number and percentage of the elderly by accessibility to health services (n = 398) (Cont.)

Accessibility to health services	N	%
Private Clinic		
- 1st place	39	(9.8)
- 2nd place	60	(15.1)
- 3rd place	300	(75.1)

Additionally, it was found that most of the elderly (69.1%) had high accessibility to community elderly clubs, more than half (56.3%) had moderate accessibility to health services, and close to three quarters (72.6%) has high satisfaction with health services, as illustrated in Table 4.4.

Table 4.4: Number and percentage of the elderly by the level of enabling factors related to health promoting behaviors

Enabling factors	Level of enabling factors					
	High		Moderate		Low	
	N	(%)	N	(%)	N	(%)
Availability of community elderly club	275	(69.1)	23	(5.8)	100	(25.1)
Accessibility to health services	95	(23.9)	224	(56.3)	79	(19.8)
Satisfaction with health services	289	(72.6)	86	(21.6)	23	(5.8)

Part 4: The findings regarding reinforcing factors

Social support from family members

The main support from family members was the support provided in the issues and problems regarding non-alcohol drinking (37.4%), non-smoking (37.2%), exercise (26.6%), stress management (22.9%), and annual physical examination (22.6%), as depicted in Table 4.5.

Social support from neighbors

Almost all of the elderly obtained fair social support from their neighbors, as shown in Table 4.5.

Social support from health promoting personnel

Good support from health promoting personnel was in the issues and problems regarding non-alcohol drinking (26.4%) and non-smoking (23.6%). The least social support from health promoting personnel was the support regarding annual physical examination (51.8%), as illustrated in Table 4.5.

Table 4.5: Number and percentage of the elderly by reinforcing factors related to health promoting behaviors

Reinforcing factors	Level of social support					
	Good		Fair		Poor	
	N	(%)	N	(%)	N	(%)
Social support from family members (total)	120	(25.6)	119	(29.9)	177	(44.5)
Nutritional practice	74	(18.6)	133	(33.4)	191	(48.0)
Exercise	106	(26.6)	164	(41.2)	128	(32.2)
Non-smoking	148	(37.2)	109	(27.4)	141	(35.4)
Non-alcohol drinking	149	(37.4)	108	(27.2)	141	(35.4)
Safety practice	74	(18.6)	149	(37.4)	175	(44.0)
Housing sanitation	72	(18.1)	155	(38.9)	171	(43.0)
Annual physical examination	90	(22.6)	139	(34.9)	169	(42.5)
Stress management	91	(22.9)	159	(39.9)	148	(37.2)
Social interaction	68	(17.1)	136	(34.2)	194	(48.7)
Social support from neighbors (total)	33	(8.3)	105	(26.4)	260	(65.3)
Nutritional practice	112	(28.2)	235	(59.0)	51	(22.8)
Exercise	101	(25.4)	224	(56.3)	73	(18.3)
Non-smoking	144	(36.2)	167	(42.0)	87	(21.8)
Non-alcohol drinking	134	(33.6)	163	(41.0)	101	(25.4)
Safety practice	95	(23.9)	204	(51.3)	99	(24.8)
Housing sanitation	106	(26.6)	207	(52.0)	85	(21.4)
Annual physical examination	113	(28.4)	219	(55.0)	66	(16.6)
Stress management	105	(26.4)	215	(54.0)	78	(19.6)
Social interaction	61	(15.3)	200	(50.3)	137	(34.4)

Table 4.5: Number and percentage of the elderly by reinforcing factors related to health promoting behaviors (Cont.)

Reinforcing factors	Level of social support					
	Good		Fair		Poor	
	N	(%)	N	(%)	N	(%)
Social support from health promoting personnel (total)	105	(26.4)	126	(31.7)	167	(42.0)
Nutritional practice	46	(11.6)	170	(42.7)	182	(45.7)
Exercise	41	(10.3)	167	(42.0)	190	(47.7)
Non-smoking	94	(23.6)	129	(32.4)	175	(44.0)
Non-alcohol drinking	105	(26.4)	137	(34.4)	156	(39.2)
Safety practice	68	(17.1)	151	(37.9)	179	(45.0)
Housing sanitation	66	(16.6)	188	(47.2)	144	(36.2)
Annual physical examination	47	(11.8)	145	(36.4)	206	(51.8)
Stress management	66	(16.6)	184	(46.2)	148	(37.2)
Social interaction	68	(17.1)	173	(43.5)	157	(39.4)

Access to health promotion information

Most of the elderly (92.5%) had access to health promotion information through mass media such as television (70.9%), radio (31.2%), speaking tower (29.4%), and newspapers (16.8%) respectively, as depicted in Table 4.6.

With regard to reinforcing factors. it was found that the elderly had poor level of social support from health promoting personnel (42.0%), family members (44.5%), and neighborhood (65.3%). However, there were differences in good levels of social support, as it was found that higher levels of social support came from health promoting personnel and family members (26.4% and 25.6%, respectively), while support from neighbors was reported as low as 8.3%, as shown in Table 4.6.

Table 4.6: Number and percentage of the elderly by access to health promotion information

Access to information	N	(%)
Yes	368	(92.5)
No	30	(7.5)
Resource		
Television	282	(70.9)
Newspaper	67	(16.8)
Speaking Tower	117	(29.4)
Radio	124	(31.2)

Part 5: The findings regarding health promoting behaviors

Close to half of the elderly (46%) had good health promoting behaviors. For example, most of them had good practice in non-alcohol drinking (90.7%), non-smoking (87.2%), safety practice (86.9%), housing sanitation (84.2%), social interaction (64.8%), annual physical examination (53.8%), exercise (50.5%), and stress management (37.4%). On the other hand, a low level of health promoting behaviors was related to housing sanitation (2%), safety practice (2.8%), and nutritional practice (5.5%), as illustrated in Table 4.7.

Table 4.7: Number and percentage of the elderly by level of overall and each domain of health promoting behaviors

Health promoting behaviors	Level of health promoting behaviors					
	Good		Fair		Poor	
	N	(%)	N	(%)	N	(%)
A Total of nine dimension	183	(46.0)	177	(44.5)	38	(9.5)
Nutritional practice	54	(38.7)	222	(58.8)	22	(5.5)
Exercise	201	(50.5)	64	(16.1)	133	(33.4)
Non-smoking	347	(87.2)	0	(0.0)	51	(12.8)
Non-alcohol drinking	361	(90.7)	0	(0.0)	37	(9.3)
Safety practice	346	(86.9)	41	(10.3)	11	(2.8)
Housing sanitation	335	(84.2)	55	(13.8)	8	(2.0)
Annual physical examination	214	(53.8)	0	(0.0)	184	(46.2)
Stress management	149	(37.4)	115	(28.9)	134	(33.7)
Social interaction	258	(64.8)	82	(20.6)	58	(14.6)

Part 6: The findings regarding quality of life

Most of the elderly had a moderate level of quality of life (75.6%), followed by high (23.6%) and low (0.8%) levels of quality of life, respectively. When considering each domain of quality of life, it was discovered that the elderly had a high quality of life in social relationships (31.9%), psychological health (28.6%), environment (22.1%), and physical health (15.3%), as shown in Table 4.8.

Table 4.8: Number and percentage of the elderly by level of total and each domain of quality of life

Quality of life	Level of Quality of Life					
	High		Moderate		Low	
	N	(%)	N	(%)	N	(%)
Total of QOL	94	(23.6)	301	(75.6)	3	(0.8)
Physical health	61	(15.3)	328	(82.4)	9	(2.3)
Psychological health	114	(28.6)	274	(68.8)	10	(2.5)
Social relationship	127	(31.9)	266	(66.8)	5	(1.3)
Environment	88	(22.1)	305	(76.6)	5	(1.3)

Part 7: The findings regarding differences in the factors relating to health promoting behaviors

In determining the factors predicting health promoting behaviors, a multiple regression analysis using stepwise method was used to examine the relationships between each important factor (socio-demographic, predisposing, enabling, and reinforcing factor) and health promoting behaviors. At the beginning of the analysis, all of the 19 available variables were included in the model. The variables included were gender, age, being married, being divorced, education, literacy, income, occupation, living arrangement, illness, primary education, high school education, undergraduate education or higher, health status perception, availability of community elderly clubs, accessibility to health services, satisfaction to health services, social support from family members, social support from neighbors, and social support from health promoting personnel. The stepwise method was used to determine the variables that significantly predicted health promoting behaviors among the elderly. The results from the multiple regression analysis with stepwise procedure yielded seven variables that predict health promoting behaviors in the elderly in Srisamrong District, Sukothai Province. The seven variables (see Table 4.9) explained approximately 33.8% of the variance in health promoting behaviors and included social support from health promoting personnel, the availability of elderly clubs, the accessibility to health services, health status perception, literacy, gender, and education level. The prediction equation is shown below:

Health promoting behaviors = 41.075 + 0.582 (Social support from health promoting personnel) + 1.274 (Availability of elderly clubs) + 0.992 (Accessibility to health services) + 0.697 (Health status perception) + 3.779 (Literacy) – 2.389 (Male) + 4.104 (Education level)

From the regression equation, it can be described that males tended to have lower health promoting behavior scores than females (2.389 lower than female counterparts). Scores of health promoting behaviors increased by 0.582 for each 1-unit increase in social support from health promoting personnel scores. Scores of

health promoting behaviors increased by 1.274 for each 1-unit increase in the availability of elderly clubs scores. Scores of health promoting behaviors increased by 0.992 for each 1-unit increase in the accessibility to health services scores. Scores of health promoting behaviors increased by 0.697 for each 1-unit increase in health status perception scores. Scores of health promoting behaviors increased by 3.779 for each 1-unit increase in literacy scores. Finally scores of health promoting behaviors increased by 4.104 for each 1-unit increase in education level scores.

Therefore, it can be concluded that, in order to for health promoting behaviors among the elderly to improve, they should have the following: support from health promoting personnel, availability of elderly clubs, improved access to health services, and good perception about their own health status. Additionally, the female elderly tended to have better health promoting behaviors than males, and the elderly with higher education also tended to have better health promoting behaviors.

Table 4.9: Multiple regression of the correlates related to health promoting behaviors in the elderly by socio-demographic, predisposing, enabling, and reinforcing factors (n = 398)

Variables	B	SE	Beta	T	Sig.	R^2
(Constant)	41.075	4.164		9.864	.001	
Social support from health promoting personnel	.582	.088	.284	6.636	.001	
Availability of elderly clubs	1.274	.246	.223	5.185	.001	
Accessibility to health services	.992	.194	.214	5.108	.001	.338
Health status perception	.697	.158	.185	4.424	.001	
Literacy	3.779	1.240	.127	3.048	.002	
Gender (male)	-2.389	.807	-.123	-2.959	.003	
Education level	4.104	1.999	.086	2.053	.041	

Predictors in the model: (Constant) social support from health promoting personnel, availability of elderly clubs, accessibility to health services, health status perception, literacy, gender, and education level

Part 8: The findings regarding differences in the health promoting behaviors related to quality of life

In determining the relationships among the nine dimensions of health promoting behaviors and quality of life, these nine variables were used in the statistical model including nutritional practice, exercise, non-smoking, non-alcohol drinking, safety practice, housing sanitation, annual physical examination, stress management, and social interaction. The results (Table 4.10) indicated that five dimensions of health promoting behaviors could be used to significantly explain quality of life among the elderly with approximately 23.3% of the variance in quality of life. These five dimensions were social interaction, exercise, housing sanitation, stress management, and nutritional practice. The prediction equation is as follows:

Quality of life = 43.183 + 1.340 (Social interaction) + 1.353 (Housing sanitation) + 0.643 (Exercise) – 0.650 (Stress management) + 0.573 (Nutritional practice)

According to the regression equation, it can be stated that stress management tended to have the lowest level of impact on quality of life scores (0.650). Scores of quality of life increased by 1.340 for each 1-unit increased in social interaction scores. Scores of quality of life increased by 1.353 for each 1-unit increased in housing sanitation scores. Scores of quality of life increased by 0.643 for each 1-unit increase in exercise scores. Finally scores of quality of life increased by 0.573 for each 1-unit increase in nutrition practice scores.

In summary, to improve the quality of life among the elderly in Srisamrong District, Sukhothai Province, several health promoting behaviors should be promoted. The health promoting behaviors in the elderly that should improve quality of life among them included social interactions, housing sanitation, exercise, nutritional practice, and stress management.

Table 4.10: Multiple regression of the correlates related to quality of life in the elderly by health promoting behaviors (n = 398)

Variable	B	SE	Beta	T	Sig.	R^2
(Constant)	43.183	5.585		7.733	.001	
Social interaction	1.340	.297	.253	4.513	.001	
Housing sanitation	1.353	.382	.183	3.540	.001	0.233
Exercise	.643	.158	.209	4.076	.001	
Stress management	-.650	.220	-.154	-2.956	.003	
Nutritional practice	.573	.250	.111	2.289	.023	

Predictors in the model: (Constant) social interaction, exercise, housing sanitation, stress management, and nutritional practice