

CHAPTER IV

RESULTS

The data analysis of this cross-sectional descriptive research which assesses the functional disability of the elderly residents of Tambon Krabi-noi, Muang district, Krabi province aims to achieve the following purposes; (1) to investigate the prevalence and dependency level of the disability among the elderly in Tambon Krabi-noi, Muang district, Krabi province and (2) to explore if these factors; namely, sex, age, marital status, education, income sufficiency, types of family, level of care received and health status, have any effects on their disability. The samples of this research were 290 cases randomly selected out of 907, equaling 32% (using simple random sampling method until the number of cases was statistically sufficient for the calculation). The researcher was solely responsible for the data collection from January to March 2005, and applied Barthel ADL Index and Chula ADL Index which is WHO standard indicator of the elderly disability as a research tool for interviews. The research tool was further adapted to suit Thai culture and situations and its content was tested for validity. The data were, in the end, analyzed using descriptive statistics; such as, frequency, percentage, means, standard deviation and chi-square which is the non-parameter test to examine the difference between factors in case of two sets of data. Results will be presented in tables with narratives in the following orders;

Section 1: General information and demographic data of the sample

Section 2: Assessment of the elderly performance of basic daily activities.

Section 3: Assessment of the elderly performance of extended daily activities

Section 4: Health problems of the elderly lasting for more than six months (long-term disability)

Section 5: Health problems incurring within the past month

Section 6: Socio-economic factors related to the elderly performance of basic daily activities

Section 7: Socio-economic factors related to the ability of the elderly to perform extended daily activities.

Section 8: Socio-economic factors related to disability caused by illnesses.

Section 9: The elderly and caregivers' opinions concerning their needs.

The followings are the results of the data analysis;

Section 1: General and demographic data of the sample (N=290)

1. Socio-economic data of the sample

The results found that out of 290 cases, 52.4% were female and 47.6% were male. Most of them were in the age range of 60-69 years (48.6%), followed by 70-79 years (36.6%) and over 80 years (14.8%). Most of the samples Buddhists were accounted of the majority with 80%, followed by Muslims (19.7%) and the majority of the samples were married (67.2%), followed by the widowed/divorced/separated elderly with 31.7% (see table 2).

Table 2: Frequency and percentage of socio-economic data of the sample by sex, age, religion and marital status

Socio-economic data	Frequency (N=290)	Percentage
Sex		
▪ Male	138	47.6
▪ Female	152	52.4
Ratio of male: female = 1:1.1		
Age		
▪ 60-69 years	141	48.6
▪ 70-79 years	106	36.6
▪ Over 80 years	43	14.8
Means = 70.96/ Median =70		
Minimum =60/ Maximum =101		
Standard deviation = 0.72		
Religion		
▪ Buddhist	232	80
▪ Muslim	57	19.7
▪ Christian	1	0.3
Marital status		
▪ Single	3	1
▪ Married	195	67.2
▪ Widowed/divorced/separated	92	31.7

Most of the elderly recruited in this research graduated with the primary school level (72.4%), 25.2% were uneducated and only 2.4% graduated with the secondary school level. The results revealed that 44.8% of the sample could read fluently and 31.4% could also read but not fluently. In addition, the majority of the sample (40.7%) could write fluently but 31.4% could not write and 29.9% could write but not fluently (see table 3).

Table 3: Frequency and percentage of the socio-economic data of the sample by education, reading and writing abilities

Socio-economic data	Frequency (N=290)	Percentage
Education		
▪ Uneducated	73	25.2
▪ Graduated from primary school	210	72.4
▪ Graduated from secondary school or higher	7	2.4
Reading skills		
▪ Able to read fluently	130	44.8
▪ Able to read but not fluently	69	23.8
▪ Not able to read	91	31.4
Writing skills		
▪ Able to write fluently	118	40.7
▪ Able to write but not fluently	81	29.9
▪ Not able to write	91	31.4

This research explores income sufficiency of the elderly and found that 42.4% had income but did not have any left for saving, 35.9% had insufficient income and 21.7% had sufficient incomes for spending and saving. Concerning types of family, most of the samples (49.7%) were co-resident with their spouse, child and grandchild, followed by 25.2% co-resident with their child and grandchild and 19.3% with their spouse. The majority of the samples lived in their own house (77.2%) while 21% lived in their child or grandchild's house (see table 4).

Table 4: Frequency and percentage of the socio-economic data of the sample by income sufficiency types of family and living conditions

Socio-economic data	Frequency (N=290)	Percentage
Income sufficiency		
▪ Sufficient and have left for saving	63	21.7
▪ Insufficient	104	35.9
Types of family		
▪ Live alone	7	2.4
▪ Co-resident with spouse	56	19.3
▪ Co-resident with spouse/child/grandchild	144	49.7
▪ Co-resident with child and grandchild	73	25.2
▪ Co-resident with grandchild	6	2.1
▪ Co-resident with acquaintances or relatives	4	1.4
Living condition		
▪ Sufficient but no saving	123	42.4
▪ Live in own house	224	77.2
▪ Live in child or grandchild's house	61	21.0
▪ Live in other people's house	4	1.4
▪ Others	1	0.3

2. Data of their caregivers

Regarding care for the 290 older persons in this research, it found that 98% of them had been attended by a caregiver and 91.6% replied that they had the caregiver with them as long as they needed; 5.2% had the caregiver for a short period of time and 3.2% responded they had the caregiver to assist them for specific matters. The majority of the caregivers (85%) worked outside as presented in table 5.

Table 5: Frequency and percentage of caregivers looking after the elderly

Data of the caregivers	Frequency (N=290)	Percentage
Attendant care by a caregiver		
▪ Yes	286	98.6
▪ No	4	1.4
Duration of the care (N=286)		
▪ As long as they needed	262	91.6
▪ For a short period of time	15	5.2
▪ For specific matters	9	3.2
Occupation of the caregiver (N=286)		
▪ Work outside	243	85.0
▪ Work in the house, including being a homemakers and unemployed	43	15.0

3. Data on health of the elderly

This research revealed 77.2% of the elderly suffered from health problems and 68.7% of them, which is the highest, had problems concerning the skeletal system including marrows, followed by problems with eyesight (33.5%) and the cardiovascular system (29.9%) as shown in table 6.

Table 6: Frequency and percentage of health issues of the elderly

Data on health problems	Frequency (N=290)	Percentage
Health problems		
▪ No	66	22.8
▪ Yes	224	77.2
Issues of the health problems (N=224)		
▪ Problems with teeth	52	23.2
▪ Problems with eyesight	75	33.5
▪ Problems with ears	24	10.7
▪ Problems with sleeping	26	11.6
▪ Problems with skeletal system including marrows	154	68.7
▪ Problems with cardiovascular system	67	29.9
▪ Problems with digestive system	53	23.7
▪ Problems with excretion system	11	4.9
▪ Problems with nervous system	31	13.8
▪ Problems with endocrine system	15	6.7
▪ Problems with skin diseases	8	3.6

Section 2: Assessment of the elderly performance of basic daily

Activities

Regarding the elderly performance of basic daily activities, this research found that 99% were independent in controlling bowels. Two activities which required someone to look after were mobility in the house and getting out of bed and both were scored not far apart; 1.7% and 1.4% respectively. Additionally, activities in which the elderly needed assistance from the caregiver the most were feeding (5.2%), followed by ascending and descending stairs (3.4%). Lastly, the top two activities which the elderly could not perform at all (dependent) were grooming; such as, wash face, comb hair, brush teeth and shave (2.1%) and bathing (1.7%) as presented in table 7.

Table 7: Frequency and percentage of the elderly performance of daily activities by dependency levels

Activities	Dependency level								Total	
	Independent		Need someone to look after		Need someone to help		Dependent			
	Fre-quency	%	Fre-quency	%	Fre-quency	%	Fre-quency	%	Fre-quency	%
- Feeding	275	94.8	-	-	15	5.2	0	0	290	100
- Grooming (wash face, comb hair, brush teeth, shave)	284	97.9	-	-	-	-	6	2.1	290	100
- Getting out of bed	283	97.6	4	1.4	1	0.3	2	0.7	290	100
- Toilet use	281	96.9	-	-	8	2.8	1	0.3	290	100
- Mobility inside the house	283	97.6	5	1.7	2	0.7	0	0	290	100
- Dressing	286	98.6	-	-	3	1.0	1	0.3	290	100
- Ascending and descending stairs	276	95.2	-	-	10	3.4	4	1.4	290	100
- Bathing	285	98.3	-	-	-	-	5	1.7	290	100
- Controlling bowels	287	99.0	-	-	0	0	3	1.0	290	100
- Controlling bladder	283	97.6	-	-	5	1.7	2	0.7	290	100

Table 8 showed that 99% of the elderly in this research could look after themselves in all activities (dependence) while there was just one person who was totally independent in all of the activities, equaling 0.3%.

Table 8: Frequency and percentage of the elderly ability to perform basic activities

Ability to perform basic activities	Frequency	Percentage
▪ Dependence	287	99.0
▪ independence	2	0.7
▪ Total independence	1	0.3

Concerning the dependency level in performing basic daily activities, it found that 99% of the elderly were in the mildly severe dependence level while each of the other three levels; namely, moderately severe dependence, severe dependence and very low initial, were equal at 0.3% (see table 9).

Table 9: Frequency and percentage of the dependency level of functional disability among the elderly in performing basic daily activities

Dependency level	Frequency	Percentage
▪ Mildly severe dependence	287	99.1
▪ Moderately severe dependence	1	0.3
▪ Severe dependence	1	0.3
▪ Very low initial	1	0.3
Total	290	100

Section 3: Assessment of the elderly performance of extended daily activities

Concerning the elderly performance in each of the extended daily activities, results showed that their mobility outside the house was good and they could walk very well (96.2%), followed by doing chores (92.7%) and paying, exchanging or

changing money (91.7%). The only activity which they needed someone to look after was walking or mobility outside the house (2.8%). The elderly needed help in traveling in a vehicle (25.3%) while they were mostly dependent in paying, exchanging and changing money (8.3%), followed by doing chores (7.2%) and cooking (6.9%) as presented in table 10.

Table 10: Frequency and percentage of the elderly performance in five extended daily activities

Activities	Dependency level								Total	
	Independent		Need someone to look after		Need someone to help		Dependent			
	Fre-quency	%	Fre-quency	%	Fre-quency	%	Fre-quency	%	Fre-quency	%
- Walking or mobility outside the house	279	96.2	8	2.8	0	0	3	1.0	290	100
- Cooking	258	89	-	-	12	4.1	20	6.9	290	100
- Chores	269	92.7	-	-	-	-	21	7.2	290	100
- Paying, exchanging or changing money	266	91.7	-	-	-	-	24	8.3	290	100
- Traveling in a vehicle	207	71.3	-	-	73	25.3	10	3.4	290	100

As shown in table 11, 70.3% of the elderly could look after themselves in all extended daily activities (dependent) while there was one case who could not in all of those activities (total independence), equaling 0.3%.

Table 11: Frequency and percentage of the elderly performance of extended daily activities

Performance of extended daily activities	Frequency	Percentage
▪ dependence	204	70.3
▪ Independence	85	29.4
▪ Total independence	1	0.3

The results on the ability to perform basic daily activities showed that the majority of the elderly (89.3%) could perform basic daily activities on their own and 70.3% for extended daily activities (see table 12).

Table 12: Frequency and percentage of the elderly performance of daily activities (using index BADL and IADL)

Ability to perform daily activities	BADL		IADL	
	Frequency	%	Frequency	%
▪ No disability	259	89.3	204	70.3
▪ With disability	31	10.7	86	29.7
Total	290	100	290	100

Section 4: Health problems of the elderly lasting for more than six months (long-term disability)

This research explores health problems which the elderly had suffered for more than 6 months (long-term disability) and it found that 87 % of them suffered from illnesses, 2.1 % from impairments and 10.9 % from both illnesses and impairments (see table 13).

Table 13: Frequency and percentage of the cause of long-term disability

Cause of long-term disability	Frequency (N=184)	Percentage
▪ Illnesses	160	87
▪ Impairments	4	2.1
▪ Both illnesses and impairments	20	10.9

Results on the long-term disability caused by illnesses in table 14 showed that 32.4% of the elderly suffered from arthritis, followed by hypertension (20.7%), backache (17.2%) and eye diseases (10%).

Table 14: The top five of illnesses or health problems causing long- term disability

Cause of long-term disability	Frequency (persons) (N=290)	Percentage
▪ Arthritis	94	32.4
▪ Hypertension	60	20.7
▪ Backache	50	17.2
▪ Eye diseases	30	10.3
▪ Headache	15	5.2

The results in table 15 revealed that 3.1% of the elderly were deaf or had difficulty in hearing for more than 6 months, followed by blindness (2.1%) and paralysis (1%).

Table 15: Frequency and percentage of chronic impairments for more than 6 months

Chronic impairments lasting for more than 6 months	Frequency (persons) (N=290)	Percentage
▪ Deafness or have difficulty in hearing	9	3.1
▪ Blindness	6	2.1
▪ Paralysis	3	1.0
▪ Amputated arms or legs	1	0.3
▪ Amputated toe or fingers	1	0.3
▪ Mute	1	0.3
▪ Atrophied arms or legs	1	0.3
▪ Mental illnesses	1	0.3
▪ Weakness of the limbs	1	0.3
▪ Arms attached to body	1	0.3

Table 16 presented results on long-term disability caused by accidents and it showed that 33.4% of the elderly had accidents from work, followed by accidents in the house or its neighborhood and from traveling; both at 25%.

Table 16: Frequency and percentage of illnesses, health problems or impairments from accidents or injuries

Illnesses, health problems or impairments by accidents or injuries	Frequency (persons)	Percentage
▪ Accidents from work	4	33.4
▪ Accidents occurred in the house or its neighborhood	3	25
▪ Accidents from traveling	3	25
▪ Being harmed or attacked	1	8.3
▪ Bitten by snakes	1	8.3
Total	12	100

Regarding types of impairments among the elderly, it found that difficulty in hearing and communication was the highest (3.4%), followed by difficulty in mobility (3.1%), in sighting (2.1%) and in mentality or behaviors (0.3%) as presented in table 17.

Table 17: Frequency and percentage of handicap types among the elderly

Types of impairments	Frequency (N=290)	Percentage
▪ Difficulty in hearing or communication	10	3.4
▪ Difficulty in mobility	9	3.1
▪ Difficulty in sighting	6	2.1
▪ Difficulty in mentality or behaviors	1	0.3

The elderly used eyeglasses and visual lenses the most (14.8%), followed by denture (9%), cane or walking stick (6.6%) and hearing aid (1%) as shown in table 18.

Table 18: Frequency and percentage of equipment devices or tools used by the elderly

Equipment devices or tools	Frequency (N=290)	Percentage
▪ Eyeglasses and visual lenses	43	14.8
▪ Denture	26	9.0
▪ Cane or walking stick	19	6.6
▪ Hearing aid	3	1.0

Table 19 showed the elderly opinions towards their current illnesses, health problems or impairments whether or not they had any effects on long-term disability and 70.7% of the elderly thought they affected the long-term disability while 29.3% disagreed.

Table 19: Frequency and percentage of the elderly opinion if illnesses, health problems or impairments cause long-term disability

Opinions of the elderly	Frequency (persons) (N=184)	Percentage
▪ Yes	130	70.7
▪ No	54	29.3
Total	184	100

In the opinions of the elderly, the most important illnesses, health problems or impairments causing long-term disability were arthritis and aches or pains in other parts of the body (40.8% of those suffering from long-term disability), followed by eye diseases (12.3%), hypertension (9.2%), gastritis (8.5%) and asthma (4.6%) as presented in table 20.

Table20: Frequency and percentage of the elderly opinions towards main causes of their long-term disability

Causes of long-term disability	Frequency (persons) (N= 130)	Percentage
▪ Arthritis and aches/pains in other parts of the body	53	40.8
▪ Eye diseases	16	12.3
▪ Hypertension	12	9.2
▪ Gastritis	11	8.5
▪ Asthma	6	4.6
▪ Diabetes	4	3.1
▪ Physical impairments	4	3.1
▪ Heart diseases	4	3.1
▪ Dementia	3	2.3
▪ Renal diseases	3	2.3
▪ Weakness of the limbs, fatigue and exhaustion	3	2.3
▪ Paralyze	2	1.5
▪ Ear diseases	2	1.5
▪ Headache	2	1.5
▪ Mental illnesses	2	1.5
▪ Thyroid	1	0.8
▪ Sore tongue or mouth	1	0.8
▪ Cancer	1	0.8
Total	130	100

Section 5: Health problems incurring within the past month

Results in table 21 concerning the health problems of the elderly showed that 29.7% of them had suffered from new health problems within the past month.

Table 21: Frequency and percentage of new health problems within the past month

New health problems within the past month	Frequency	Percentage
▪ Yes	86	29.7
▪ No	204	70.3
Total	290	100

Presented in table 22 concerns causes of the new health problem in the past month and results showed that 97.7% of the health problems came from illnesses, 2.3 % from accidents or injuries.

Table 22: Frequency and percentage of the cause of new health problems within the past month

Cause of new health problems	Frequency	Percentage
▪ Illnesses	84	97.7
▪ Accidents or injuries	2	2.3
▪ Total	86	100

Major new health problems among the elderly which occurred in the past month were common cold and sore throat (17.2%), followed by backache (7.9%), headache (5.9%) and rheumatism (4.8%) as shown in table 23.

Table 23: The top five of new health problems among the elderly in the past month by types of illnesses

Illnesses	Frequency	Percentage
▪ Common cold and sore throat	50	17.2
▪ Backache	23	7.9
▪ Headache	17	5.9
▪ Rheumatism	14	4.8
▪ Stomachache and gastritis	8	2.8

According to table 24 which provides a conclusion of the disability among the elderly, it found that 2.1 % of them had short-term disability; 97.9% had long-term disability.

Table 24: Frequency and percentage of the disability prevalence among the elderly

Functional disability	Frequency	Percentage
▪ Short-term disability	4	2.1
▪ Long-term disability	184	97.9
▪ Total	188	100

Section 6: Socio-economic factors related to the elderly performance of basic daily activities

Considering the functional disability of the elderly, categorized by socio-economic factors, results showed that females (11.8%) had suffered from the disability more than males (9.4%). Regarding age, those aged over 80 years were disabled the most (25.6%), followed by those aged 70-79 years (9.4%). In addition, age was the factor which was significantly related with the disability at P value < 0.05. The results also revealed that the widowed, divorced or separated elderly had the highest percentage of disability (16.3%) and the Buddhist and Muslim elderly were relatively similar in suffering from disability as presented in table 25.

Table 25: Socio-economic factors related to functional disability of the elderly in performing basic daily activities by sex, age, marital status and religion

Socio-economic factors	With disability	No disability	P-value
	Frequency [%]	Frequency [%]	
Sex			
▪ Male	13 [9.4]	125 [90.6]	0.505
▪ Female	18 [11.8]	134 [88.2]	
Age			
▪ 60-69 years	10 [7.1]	131 [92.1]	0.002*
▪ 70-79 years	10 [9.4]	96 [90.6]	
▪ Over 80 years	11 [25.6]	32 [74.4]	
Marital status			
▪ Single	0 [0]	3 [100]	0.97
▪ Married	16 [8.2]	179 [91.8]	
▪ Widowed/divorced/ separated	15 [16.3]	77 [83.7]	
Religion			
▪ Buddhist	25 [10.8]	207 [89.2]	0.940
▪ Muslim	6 [10.5]	51 [89.5]	
▪ Christian	0 [0]	1 [100]	

Table 26 concerns education, reading and writing abilities and income sufficiency and results showed that in terms of education background, 17.8% of the elderly who were uneducated suffered from disability, followed by those graduated from the primary school (8.6%). Regarding reading skills, 16.3% of the elderly who could not read were disabled the most, followed by those who could read but not fluently (11.8%). Concerning writing skills, 16.5% of those who could not write also suffered from disability, followed by the elderly who were capable of writing but not fluently (14.8%). Additionally, writing ability was significantly related with disability at P value < 0.05. Lastly, concerning income sufficiency, the elderly with a shortage of incomes suffered from disability the most (13.4%), followed by those with sufficient incomes but no saving (8.1%).

Table 26: Socio-economic factors related to functional disability of the elderly in performing basic daily activities by education, reading and writing skills and income sufficiency

Socio-economic factors	With disability	No disability	P-value
	Frequency [%]	Frequency [%]	
Education			
▪ Uneducated	13 [17.8]	60 [82.2]	0.127
▪ Primary school	18 [8.6]	192 [91.4]	
▪ Secondary school or higher	0 [0]	7 [100]	
Reading skills			
▪ Able to read fluently	8 [6.2]	122 [93.8]	0.052
▪ Able to read but not fluently	8 [11.8]	60 [88.2]	
▪ Not able to read	15 [16.3]	77 [83.7]	
Writing skills			
▪ Able to write fluently	4 [3.4]	114 [96.6]	0.004*
▪ Able to write but not fluently	12 [14.8]	69 [85.2]	
▪ Not able to write	15 [16.5]	76 [83.5]	
Income sufficiency			
▪ Sufficient with saving	4 [6.3]	59 [93.7]	0.259
▪ Sufficient without saving	10 [8.1]	113 [91.9]	
▪ Insufficient	13 [13.4]	84 [86.6]	

Regarding types of family, the elderly living with child and grandchild suffered from disability the most (20.6%), followed by those living with grandchild (16.7%). In addition, results showed that the type of family was significantly related with disability at P value < 0.05. This research also explores the living condition of the elderly and found that 25% of the elderly living in other people's house suffered from disability, followed by those living in their child and grandchild's house (19.7%). Concerning attendant care for the elderly, 10.8% of those without a

caregiver most suffered from disability and the research found that the elderly having health problems tended to be disabled more than those without any health problems. Statistically, the health problem was significantly related to disability at P value < 0.05 as shown in table 27.

Table 27: Socio-economic factors related to functional disability of the elderly in performing basic daily activities by types of family, living conditions, attendant care and health problems

Socio-economic factors	With disability	No disability	P-value
	Frequency [%]	Frequency [%]	
Types of family			
▪ Live alone	0 [0]	7 [100]	0.043*
▪ Co-resident with spouse	3 [5.4]	53 [94.6]	
▪ Co-resident with spouse/child/ grandchild	12 [8.3]	132 [91.7]	
▪ Co-resident with child and grandchild	15 [20.6]	58 [79.4]	
▪ Co-resident with grandchild	1 [16.7]	5 [83.3]	
▪ Co-resident with acquaintances or relatives	0 [0]	4 [100]	
Living conditions			
▪ Live in own house	18 [8.0]	206 [92.0]	0.51
▪ Live in child or grandchild's house	12 [19.7]	49 [80.3]	
▪ Live in other people's house	1 [25]	3 [75]	
▪ Others	0 [0]	1 [100]	
Attendant care by a caregiver			
▪ Yes	0 [0]	4 [100]	0.486
▪ No	31 [10.8]	255 [89.2]	
Health problems			
▪ No	7 [10.3]	61 [89.7]	0.014*
▪ Yes	24 [10.8]	198 [89.19]	

Section 7: Socio-economic factors related to the ability of the elderly to perform extended daily activities

This research explores the disability of the elderly and if categorized by socio-economic factors, it found that the female elderly suffered from the disability more than the male (female = 34.2% and male = 24.6%). Concerning age, the elderly aged over 80 years were the group facing the disability the most (97.1%), followed by those aged 70-79 years (29.2%). In addition, age is significantly related to disability at P value 0.001. Regarding the marital status, the widowed, divorced or separated elderly suffered the most from disability (41.3%), followed by the married elderly (24.6%). Additionally, the marital status revealed a statistically significant relation with disability at the P value < 0.05. Last, for religion, the Buddhist elderly suffered the most from disability (36.2%) and the religion was significantly related to disability at P value < 0.001 as presented in table 28.

Table 28: Socio-economic factors related to the ability of the elderly to perform extended daily activities by sex, age, marital status and religion

Socio-economic factors	With disability	No disability	P-value
	Frequency [%]	Frequency [%]	
Sex			
▪ Male	34 [24.6]	104 [75.4]	0.075
▪ Female	52 [34.2]	100 [65.8]	
Age			
▪ 60-69 years	22 [15.6]	119 [84.4]	<0.001**
▪ 70-79 years	31 [29.2]	75 [70.8]	
▪ Over 80 years	33 [97.1]	1 [2.9]	
Marital status			
▪ Single	0 [0]	3 [100]	0.008*
▪ Married	48 [24.6]	147 [75.4]	
▪ Widowed/divorced/ separated	38 [41.3]	54 [58.7]	
Religion			
▪ Buddhist	84 [36.2]	148 [63.8]	<0.001**
▪ Muslim	2 [3.5]	55 [96.5]	
▪ Christian	0 [0]	1 [100]	

Concerning the education, the uneducated elderly were the highest in suffering from disability (54.8%), followed by those who graduated from the primary school (21.9%). In addition, results showed that education was significantly related to disability at P value < 0.001. Regarding reading ability, the elderly who could not read suffered the most from disability (52.2%), followed by those who could read but not fluently (32.1%) and it found that the reading ability was significantly related to disability at P value < 0.001. If looking at the writing ability, the elderly who could not write were the group with the highest percentage of disability at 51.6%, followed by those who could write but not fluently at 32.11%. Similarly, the writing ability was significantly related to disability at P value < 0.001. Finally, for the income sufficiency, the elderly who had a shortage of incomes suffered the most from disability (47.4%), followed by those who had sufficient incomes but no saving.

Additionally, the income sufficiency was significantly related to disability at P value < 0.001 as shown in table 29.

Table 29: Socio-economic factors related to the ability of the elderly to perform extended daily activities by education, reading and writing skills and income sufficiency

Socio-economic factors	With disability	No disability	P-value
	Frequency [%]	Frequency [%]	
Education			
▪ Uneducated	40 [54.8]	33 [45.2]	<0.00**
▪ Primary school	46 [21.9]	164 [78.1]	
▪ Secondary school or higher	0 [0]	7 [100]	
Reading skills			
▪ Able to read fluently	17 [13.1]	113 [86.9]	<0.001**
▪ Able to read but not fluently	21 [30.9]	47 [69.1]	
▪ Not able to read	48 [52.2]	44 [47.8]	
Writing skills			
▪ Able to write fluently	13 [11]	105 [89]	<0.001**
▪ Able to write but not fluently	26 [32.1]	55 [67.9]	
▪ Not able to write	47 [51.6]	44 [48.4]	
Income sufficiency			
▪ Sufficient with saving	5 [7.9]	58 [92.1]	<0.001**
▪ Sufficient without saving	30 [24.4]	93 [75.6]	
▪ Insufficient	46 [47.4]	51 [52.6]	

Regarding types of family, the elderly living with grandchild suffered the most from disability (50%), followed by those living alone (48.9%). Concerning the living conditions, the elderly living in other people's house had the highest percentage of suffering from disability (75%), followed by those living with their child and grandchild (45.9%). Results on the attendant care showed that the elderly who have a caregiver had a higher percentage of suffering from disability (71.3%) than those without the caregiver. In addition, living condition and attendant care were significantly related to disability at P value < 0.05. Regarding health problems, results showed 35.9% of the elderly who had health problems suffered from disability and

health problems were significantly related to disability at P value < 0.001 as shown in table 30.

Table 30 Socio-economic factors related to ability of the elderly to perform extended daily activities by types of family, living condition and health problems

Socio-economic factors	With disability	No disability	P-value
	Frequency [%]	Frequency [%]	
Types of family			
▪ Live alone	3 [48.9]	4 [57.1]	0.161
▪ Co-resident with spouse	16 [28.6]	40 [71.4]	
▪ Co-resident with spouse/child/ grandchild	34 [23.6]	110 [76.4]	
▪ Co-resident with child and grandchild	29 [39.7]	44 [60.3]	
▪ Co-resident with grandchild	3 [50]	3 [50]	
▪ Co-resident with acquaintances or relatives	1 [25]	3 [75]	
Living condition			
▪ Live in own house	55 [24.6]	169 [75.4]	0.02*
▪ Live in child or grandchild's house	28 [45.9]	33 [54.1]	
▪ Live in other people's house	3 [75]	1 [25]	
▪ Others	0 [0]	1 [100]	
Attendant care by a caregiver			
▪ No	0 [0]	4 [100]	0.02*
▪ Yes	204 [71.3]	82 [28.7]	
Health problems			
▪ No	6 [9.0]	61 [91.0]	0.001**
▪ Yes	80 [35.9]	143 [64.1]	

Section 8: Socio-economic factors related to disability caused by illnesses

Results showed that for the dependence level of long-term disability among the elderly, 60% of the elderly suffered from the long-term disability at very low initial level, followed by those at mildly severe dependence level (2.8%) and at moderately severe dependence level (2%). If comparing the data exclusively among the elderly with long-term disability, 94.6% were at very low initial level, 4.3% at the mildly severe dependence level and 1.1% at the moderately severe dependence level as presented in table 31.

Table 31: Level of dependence for long-term disability among the elderly

Level of dependence	Definitions	Frequency (persons)	Percentage of total sample (the elderly)	Percentage of the elderly with disability
None	No disability	106	36.6	-
Very low initial	Able to mobilize outside the house	174	60	94.6
Mildly severe dependence	Not able to mobilize outside the house but able to do so inside the house or in their room	8	2.8	4.3
Moderately severe dependence	Not able to mobilize inside the house nor in their room; just able to sit	2	0.7	1.1
Severe dependence	Must lie down all the time and need attendant care	0	0	0

Concerning the relation between the long-term disability and socio-economic factors, results showed that sex and religion were significantly related to long-term disability at P value < 0.05 and < 0.001 respectively. In addition, the female elderly suffered from disability more than the male and 72.1% were aged over 80 years. Regarding the marital status, the widowed, divorced or separated elderly suffered

from the long-term disability as the highest (64.1%), followed closely by those who were still married (63.6%). For the religion, results indicated that 72.8% of the Buddhist elderly suffered from the long-term disability and most of them were at very low initial level as presented in table 32.

Table 32: Frequency and percentage of the elderly with long-term disability and level of dependence by socio-economic factors

Socio-economic factors	No long-term disability	With long-term disability				
		Total	Level of dependence			
			Very low initial	Mildly severe dependence	Moderately severe dependence	Severe dependence
Sex*						
▪ Male	59 [42.8]	79 [57.2]	74 [53.6]	5 [3.6]	0 [0]	0 [0]
▪ Female	47 [30.9]	105 [69.1]	100 [65.8]	3 [2.0]	2 [1.3]	0 [0]
Age						
▪ 60-69 years	58 [41.1]	83 [58.9]	82 [58.2]	1 [0.7]	0 [0]	0 [0]
▪ 70-79 years	36 [34.0]	70 [66.0]	68 [64.2]	2 [1.8]	0 [0]	0 [0]
▪ Over 80 years	12 [27.9]	31 [72.1]	24 [55.8]	5 [11.6]	2 [4.7]	0 [0]
Marital status						
▪ Single	2 [66.6]	1 [33.4]	1 [33.4]	0 [0]	0 [0]	0 [0]
▪ Married	71 [36.4]	124 [63.6]	118 [60.5]	6 [3.1]	0 [0]	0 [0]
▪ Widowed/divorced/separated	33 [35.9]	59 [64.1]	55 [59.7]	2 [2.2]	2 [2.2]	0 [0]
Religion**						
▪ Buddhist	63 [27.2]	169 [72.8]	159 [68.5]	8 [3.4]	2 [0.9]	0 [0]
▪ Muslim	42 [73.7]	15 [26.3]	15 [26.3]	0 [0]	0 [0]	0 [0]
▪ Christian	1 [100]	0 [0]	0 [0]	0 [0]	0 [0]	0 [0]

* P < 0.05, ** P < 0.001

Education and reading ability were significantly related to long-term disability at P value < 0.05. Likewise, the writing ability and income sufficiency were also significantly related to long-term disability at P value < 0.001. In addition, results also pointed out that the following characteristics suffered from disability as the highest and at very low initial level as presented in table 33; uneducated (76.7%), could not read (79.3%) nor write (76.9%) and were inadequate of incomes (85.6%).

Table 33: Frequency and percentage of the elderly with long-term disability and level of dependence by socio-economic factors

Socio-economic factors	No long-term disability	With long-term disability				
		Total	Level of dependence			
			Very low initial	Mildly severe dependence	Moderately severe dependence	Severe dependence
Education*						
- Uneducated	17 [23.3]	56 [76.7]	51 [69.9]	3 [4.1]	2 [2.7]	0 [0]
- Primary school	83 [39.5]	127[60.5]	122[58.1]	5 [2.4]	0 [0]	0 [0]
- Secondary school or higher	6 [85.7]	1 [14.3]	1 [14.3]	0 [0]	0 [0]	0 [0]
Reading skills*						
- Able to read fluently	59 [45.4]	71 [54.6]	70 [53.8]	1 [0.8]	0 [0]	0 [0]
- Able to read but not fluently	28 [41.2]	40 [58.8]	37 [54.4]	3 [4.4]	0 [0]	0 [0]
- Not able to read	19 [20.7]	73 [79.3]	67 [72.8]	4 [4.3]	2 [2.2]	0 [0]
Writing skills**						
- Able to write fluently	58 [49.2]	60 [50.8]	59 [50.0]	1 [0.8]	0 [0]	0 [0]
- Able to write but not fluently	27 [33.3]	54 [66.4]	51 [63.0]	3 [3.4]	0 [0]	0 [0]
- Not able to write	21 [23.1]	70 [76.9]	64 [70.3]	4 [4.4]	2 [2.2]	0 [0]
Income sufficiency**						
- Sufficient with saving	39 [61.9]	24[38.1]	23 [36.5]	1 [1.6]	0 [0]	0 [0]
- Sufficient without saving	52 [42.3]	71 [57.7]	68 [55.3]	2 [1.6]	1 [0.8]	0 [0]
- Insufficient	15 [14.4]	89 [85.6]	82 [78.8]	6 [5.8]	1 [1.0]	0 [0]

*P < 0.05, ** P< 0.001

Results revealed the statistically significant relation between health problems and long-term disability at P value < 0.001. What's more, the elderly who lived alone (85.7%), in their child and grandchild's house (67.2%) and did not have a caregiver (75%) had the highest percentage of long-term disability. Regarding living conditions, the elderly living in their grandchild's house were the group with the highest percentage of suffering from long-term disability (67.2%), followed by those living in their own house (62.9%). For attendant care received, the elderly without help from

the caregiver were disabled as the highest at 75%. Regarding health problems, the elderly with health problems suffered the most from disability at 78.9% and those with the long-term disability were at a very low initial level of dependence as presented in table 34.

Table 34: Frequency and percentage of the elderly with long-term disability and level of dependence by socio-economic factors

Socio-economic factors	No long-term disability	With long-term disability				
		Total	Level of dependence			
			Very low initial	Mildly severe dependence	Moderately severe dependence	Severe Dependence
Types of family						
- Live alone	1 [14.3]	6 [85.7]	6 [85.7]	0 [0]	0 [0]	0 [0]
- Co-resident with spouse	15 [26.8]	41 [73.2]	38 [67.9]	3 [5.3]	0 [0]	0 [0]
- Co-resident with spouse/child/grandchild	59 [41.0]	85[59.0]	82 [56.9]	3 [2.1]	0 [0]	0 [0]
- Co-resident with child and grandchild	28 [38.4]	45 [61.6]	42 [57.5]	2 [2.7]	1 [1.4]	0 [0]
- Co-resident with grandchild	1 [16.7]	5 [83.3]	4 [66.6]	0 [0]	1 [16.7]	0 [0]
- Co-resident with acquaintances or relatives	2 [50]	2 [50]	2 [50]	0 [0]	0 [0]	0 [0]
Living conditions						
- Live in own house	83 [37.1]	141 [62.9]	134 [59.8]	7 [3.1]	0 [0]	0 [0]
- Live in child or grandchild's house	20 [32.8]	41 [67.2]	38 [62.4]	1 [1.6]	2 [3.2]	0 [0]
- Live in other people's house	2 [50.0]	2 [50.0]	2 [50.0]	0 [0]	0 [0]	0 [0]
- Others	1 [100]	0 [0]	0 [0]	0 [0]	0 [0]	0 [0]
Attendant care by a caregiver						
- Yes	105 [36.7]	181 [63.3]	171 [59.8]	8 [2.8]	2 [0.7]	0 [0]
- No	1 [25.0]	3 [75.0]	3 [75.0]	0 [0]	0 [0]	0 [0]
Health problems**						
- No	59 [88.1]	8 [11.9]	7 [10.4]	1 [1.5]	0 [0]	0 [0]
- Yes	47 [21.1]	176[78.9]	166[74.4]	8 [3.6]	2 [0.9]	0 [0]

* P < 0.05, ** P < 0.001

Concerning level of dependence caused by disability among the elderly, 61.4% of the total elderly populations with disability were at a very low initial, 2.8% at mildly severe dependence level and 0.7% at moderately severe dependence level. Comparison among the elderly with disability showed that 94.7% were at very low initial level, 4.3% at mildly severe dependence and 1.1% at moderately severe dependence as presented in table 35.

Table 35: Dependence level of the disability among the elderly

Level of dependence	Definitions	Frequency (persons)	Percentage of total sample (the elderly)	Percentage of the elderly with disability
None	No disability	102	35.2	-
Very low initial	Able to mobilize outside the house	178	61.4	94.7
Mildly severe dependence	Not able to mobilize outside the house but able to do so inside the house or in their room	8	2.8	4.3
Moderately severe dependence	Not able to mobilize inside the house nor in their room and just able to sit	2	0.7	1.1
Severe dependence	Must lie down all the time and need attendant care	0	0	0

If considering socio-economic factors, results showed that the percentage of the female elderly with disability was 69.8% which was higher than the male and those aged over 80 years were disabled the most at 74.4%, followed by the elderly aged 70-80 years (66%). Regarding the marital status, the married elderly were disabled the most at 65.5%, followed by the widowed/ divorced or separated elderly (64.1%). Concerning the religion, the results also indicated that 72.8% of the Buddhist elderly were disabled and the religion was significantly related to disability at P value

< 0.001 and the majority of the disabled elderly were at very low initial for the dependence level as presented in table 36.

Table 36: Frequency and percentage of the elderly with disability and dependence level by socio-economic factors

Socio-economic factors	No long-term disability	With disability				
		Total	Level of dependence			
			Very low initial	Mildly severe dependence	Moderately severe dependence	Severe dependence
Sex						
- Male	56 [40.6]	82 [59.4]	77 [55.8]	5 [3.6]	0 [0]	0 [0]
- Female	46 [30.2]	106[69.8]	101[66.4]	3 [2.0]	2 [1.4]	0 [0]
Age						
- 60-69 years	55 [39.0]	86 [61.0]	85 [60.3]	1 [0.7]	0 [0]	0 [0]
- 70-79 years	36 [34.0]	70 [66.0]	68 [64.2]	2 [1.9]	0 [0]	0 [0]
- Over 80 years	11 [25.6]	32 [74.4]	25 [58.1]	5 [11.6]	2 [4.7]	0 [0]
Marital status						
- Single	2 [66.7]	1 [33.3]	1 [33.3]	0 [0]	0 [0]	0 [0]
- Married	67 [34.4]	128[65.6]	122[62.6]	6 [3.0]	0 [0]	0 [0]
- Widowed/ divorced/separated	33 [35.9]	59 [64.1]	55[59.7]	2 [2.2]	2 [2.2]	0 [0]
Religion**						
- Buddhist	60 [25.9]	172[74.1]	162[69.8]	8 [3.4]	2 [0.9]	0 [0]
- Muslim	41 [71.9]	16 [28.1]	16 [28.1]	0 [0]	0 [0]	0 [0]
- Christian	1 [100]	0 [0]	0 [0]	0 [0]	0 [0]	0 [0]

* P < 0.05, ** P < 0.001

Most of the elderly with disability were as follows; uneducated (78.1%); could not read (80.4%); nor write (78%); and did not have sufficient incomes (86.5%). In addition, education and reading ability were significantly related to disability at P value < 0.05 while the writing ability and income sufficiency were significantly related to disability at P value < 0.001 (see table 37).

Table 37: Frequency and percentage of the elderly with disability and dependence level by socio-economic factors

Socio-economic factors	No long-term disability	With disability				
		Total	Level of dependence			
			Very low initial	Mildly severe dependence	Moderately severe dependence	Severe dependence
Education*						
- Uneducated	16 [21.9]	57 [78.1]	52 [71.3]	3 [4.1]	2 [2.7]	0 [0]
- Primary school	80 [38.1]	130 [61.9]	125 [59.5]	5 [2.4]	0 [0]	0 [0]
- Secondary school or higher	6 [85.7]	1 [14.3]	1 [14.3]	0 [0]	0 [0]	0 [0]
Reading skills*						
- Able to read fluently	58 [44.6]	72 [55.4]	71 [54.6]	1 [0.8]	0 [0]	0 [0]
- Able to read but not fluently	26 [38.2]	42 [61.8]	39 [57.4]	3 [4.4]	0 [0]	0 [0]
- Not able to read	18 [19.6]	74 [80.4]	68 [73.9]	4 [4.3]	2 [2.2]	0 [0]
Writing skills**						
- Able to write fluently	57 [48.3]	61 [51.7]	60 [50.8]	1 [0.9]	0 [0]	0 [0]
- Able to write but not fluently	25 [30.9]	56 [69.1]	53 [65.4]	3 [3.7]	0 [0]	0 [0]
- Not able to write	20 [22.0]	71 [78.0]	65 [71.4]	4 [4.4]	2 [2.2]	0 [0]
Income sufficiency**						
- Sufficient with saving	39 [61.9]	24 [38.1]	23 [36.5]	1 [1.6]	0 [0]	0 [0]
- Sufficient without saving	49 [39.8]	74 [60.2]	71 [57.8]	2 [1.6]	1 [0.8]	0 [0]
- Insufficient	14 [13.5]	90 [86.5]	83 [79.8]	6 [5.8]	1 [0.9]	0 [0]

* P < 0.05, ** P < 0.001

The elderly who were on their own (85.7%), co-resident with their child and grandchild's house (67.2%), had a caregiver (64.6%) and had health problems (80.7%) scored the highest of disability. Additionally, health problems were significantly related to disability at P value < 0.001 as shown in table 38.

Table 38: Frequency and percentage of the elderly with disability and dependence level by socio-economic factors

Socio-economic factors	No long-term disability	With disability				
		Total	Level of dependence			
			Very low initial	Mildly severe dependence	Moderately severe dependence	Severe dependence
Types of family						
- Live alone	1 [14.3]	6 [85.7]	6 [85.7]	0 [0]	0 [0]	0 [0]
- Co-resident with spouse	15 [26.8]	41 [73.2]	38 [67.9]	3 [5.3]	0 [0]	0 [0]
- Co-resident with spouse/child/grandchild	55 [38.2]	89 [61.8]	86 [59.7]	3 [2.1]	0 [0]	0 [0]
- Co-resident with child and grandchild	28 [38.4]	45 [61.6]	42 [57.5]	2 [2.7]	1 [1.4]	0 [0]
- Co-resident with grandchild	1 [16.7]	5 [83.3]	4 [66.6]	0 [0]	1 [16.7]	0 [0]
- Co-resident with acquaintances or relatives	2 [50.0]	2 [50.0]	2 [50.0]	0 [0]	0 [0]	0 [0]
Living condition						
- Live in own house	79 [35.3]	145 [64.7]	138 [61.6]	7 [3.1]	0 [0]	0 [0]
- Live in child or grandchild's house	20 [32.8]	41 [67.2]	38 [62.4]	1 [1.6]	2 [3.2]	0 [0]
- Live in other people's house	2 [50.0]	2 [50.0]	2 [50.0]	0 [0]	0 [0]	0 [0]
- Others	1 [100.0]	0 [0]	0 [0]	0 [0]	0 [0]	0 [0]
Attendant care by a caregiver						
- Yes	101 [35.4]	185 [64.6]	175 [61.2]	8 [2.8]	2 [0.6]	0 [0]
- No	1 [25.0]	3 [75.0]	3 [75.0]	0 [0]	0 [0]	0 [0]
Health problems**						
- No	59 [88.1]	8 [11.9]	7 [10.4]	1 [1.5]	0 [0]	0 [0]
- Yes	43 [19.3]	180 [80.7]	170 [76.2]	8 [3.6]	2 [0.9]	0 [0]

* P < 0.05, ** P < 0.001

Section 9: The elderly and caregivers' opinions concerning their needs

1. Needs of the elderly

Concerning the elderly need from their family, most of them would like their child and grandchild to visit them and inquire about their being. Asked what the elderly wanted their child and grandchild to assist the most, they responded they would like their family to look after them when they were sick or take them to hospital when they need to or sometimes support them financially. Some of the elderly thought their child and grandchild were still troubled with money; so they did not want them to be burdened taking care of them. All they needed was their care and attention when they were ill and take them to hospital when they needed. They did not expect financial support from their child and grandchild but would accept the money from them if they would like to offer. Most of the elderly would like the government to pay more attentions to medical welfares for older people, especially their monthly allowances which the government allocated 300 baht for each of them but not many of them actually received it. In addition, they thought 300 baht was insufficient; at least it should have been 500-600 per month but 300 baht was better than nothing and they could save it for personal use and they did not have to request for money from their child and grandchild. They did not want the local administration organizations to handle their monthly allowances and they thought infrastructures and utilities; such as, water and roads, should be improved to become more convenient. Regarding their health problems, they would like their child and grandchild to take care of them.

2. Needs of the caregiver

The caregiver of the elderly had similar opinions with the elderly. They would like the government to allocate more budgets on medical welfares which should be free and more easily accessible. Additionally, they suggested the government should arrange allowances for each of the elderly aged over 60 years without any condition or discrimination and should involve communities or local administration organizations to take responsibilities of welfares for the elderly.