



CHAPTER IV

RESEARCH RESULTS

The objective of data analysis and descriptive research on the Prevalence and Determinants of Hypertension among elderly in Dinudom Subdistrict, Lumtap District, Krabi Province is to find the Prevalence among elderly in Dinudom Subdistrict, Lumtap District, Krabi Province. The factors of gender, age, marital status, education, career background, income sufficiency, source of income, genetic, life style, disability and illness condition are taken into account that could develop Hypertension among elderly. The research conducted among 360 of elderly in Dinudom Subdistrict, Lumtap District, Krabi Province during April-May 2005. The data collection was performed by the researcher with specified tool which was referred as questionnaire. The questionnaire was verified the completion and content validity by the researcher. The data analysis conducted with Descriptive statistics such as Frequency, Percentage, Average, Standard Deviation and Inferential statistics which applied Non-Parameter such as Chi-Square Test. This Non- Parameter analyzed the relationship between Instrumental Variable and Dependent Variable. The results of the research were presented in the consecutively descriptive tables which were comprised of:

- Part 1 General information and personal information of the Study Population.
- Part 2 Evaluation of Performance Efficiency toward Basic Activities of Daily Living of elderly.

Part 3 The questionnaire relates to Operational Efficiency of Instrumental Activity of Daily Living.

Part 4 The study of the relationship between Prevalence and Determinants of Hypertension among elderly in Dinudom Subdistrict which is categorized by gender, age, marital status, education, career background, income sufficiency, genetic and risk behavior to Hypertension in the past and present on dietary, drinking, exercise, disability and Health Problem.

The results from the Study Population are as followed:

Part 1 General information and personal information of the Sample. (N=360)

Characteristics of the Study Population

The result from the Study Population of 360 respondents found that the study population consisted of female 48.3% and male of 51.7%. Majority of the respondents were between 60 and 69 years old which was considered as 55.8% of the study population. Secondly, there were 34.2% of the respondents aged 70-79 and 10% of respondents aged 80 and over. According to the martial status, 1.7% of the respondents were single, 71.1% of the respondents were married, 24.2% of the respondents were widow, and 2.5% of the respondents were divorce or separate, 63.3% of the respondents had primary education which represents the majority of the study population. 34.7% of the respondents had no formal education and only 1.9% of the respondents had the secondary education. 70% of the respondents were literacy meanwhile only 8.6% of the respondents were able to read but unable to write and 8.6% of the respondents were illiteracy. 21.4% of the respondents were doing agriculture for living, 96.2% of the respondents were merchants, and only 1.9% of the

respondents were government worker income sufficiency among respondents found that 98.9% of the respondents had sufficient income meanwhile 1.1% of the respondents had insufficient income. 60% of the respondents earned their income from their descendants, 28.1% of the respondents earned their income from agriculture, 8.3% of the respondents earned their income from trading, 1.9% from retirement pension fund, and 1.7% from spouses shown in Table 4.1

Table 4.1: Characteristic of the elderly respondents categorized by gender, age, marital status, education, literate, career background, income sufficiency and sources of income in quantity and percentage.

Characteristic / Demography	Quantity (N=360)	Percentage
Gender		
Male	186	51.7
Female	174	48.3
Ratio Male: Female = 1.07: 1		
Age		
60-69 year old	201	55.8
70-79 year old	123	34.2
Over 80 year old	36	10.0
Mean = 69.54 Median = 68		
Std. Deviation = 7.145		
Marital Status		
Single	6	1.7
Married	258	71.7
Widowed	87	24.2
Divorced/Separated	9	2.5
Education Level		
Uneducated	125	34.7
Primary Education	228	63.3
Secondary Education	7	1.9
Certificate / Diploma education	0	0
Literacy proficiency		
Able to read and write	252	70.0
Able to read but unable to write	31	8.6
Unable to read	77	21.4
Career background		
Agriculture/Farming	346	96.2
Merchant	7	1.9
Employee	0	0
Government officer	7	1.9
Others	0	0
Income Sufficiency		
Sufficient	356	98.9
Insufficient	4	1.1
Source of income		
Spouse	6	1.7
Descendant	216	60.0
Retirement pension	7	1.9
Trading	30	8.3
Other (Agriculture)	101	28.1

The research on the immediate family history of respondents who develop Hypertension found that 73.3% did not have Hypertension. 10% of the immediate family had Hypertension while 16.7% did not know whether the person might have Hypertension. 20.8% did not have the chronic disease for the duration more than six months. 79.2% had the chronic disease for more than six months. 59.5% had at least 1-2 chronic diseases while 19.7% had more than two chronic diseases as shown in Table 4.2

Table 4.2: Personal diseases in immediate family history of elderly respondents and the chronic disease in elderly respondents which had the duration more than six months.

Personal disease	Quantity (N=360)	Percentage
Hypertension in immediate family history		
No	264	73.3
Yes	36	10.0
N/A	60	16.7
Chronic diseases which has the duration more than six months		
No	75	20.8
Yes	285	79.2
1-2 chronic diseases	214	59.5
More than 2 chronic diseases	71	19.7

The research on physical handicapped elderly found that Hearing impairments were the symptoms that lasted more than six months and mostly found in the respondents who had chronic disability. It represented 6.4% of the respondents. Secondly, there were scoliosis, blind and paralysis which represented 1.7%, 1.4% and 1.4% respectively. It was 16.1% of the respondents that the disease of health problem

and chronic disability that lasted for more than six months, which affect the ability to work or perform any activities while 83.9% answered that those did not effect toward their ability to work or perform any activities as shown in Table 4.3

Table 4.3: Personal diseases that lasts more than six months including health problem or handicapped which affect the ability to perform the activities shown in quantity and percentage.

Personal disease	Quantity (N=360)	Percentage
Chronic disability that lasts more than 6 months		
Hearing impairment	23	6.4
Scoliosis	6	1.7
Blindness	5	1.4
Paralysis	5	1.4
Illness, Health problem and had Chronic disability that lasts more than 6 months		
Effect	302	83.9
Non-effect	58	16.1

The study of illness in elderly respondents found that 79.2% of the respondents had the recent illness within two weeks while 20.8% did not have any recent illness in two weeks. 1.1% of the respondents who had illness would need the time for convalescence less than seven days. 1.4% needed to absence from work (less than five days). 14% of the respondents who had the recent health problem or the illness in two weeks encountered with only one illness while 5.65% encountered with a combination of more than two illnesses, accident or injury represented 3.9%. Out of these 3.9%, 3.1% caused by household accident and 0.8% by transportation accident as shown in Table 4.4

Table 4.4: The health problem or the illness during the first two weeks and accident or injury within 2 weeks of the elderly respondents in quantity and percentage.

Personal disease	Quantity (N=360)	Percentage
Recent illness within two weeks		
Yes	67	19.6
No	293	81.4
Convalescence		
Less than seven days	4	1.1
Absence from work		
Less than five days	5	1.4
Health problem or illnesses suffered within 2 weeks		
One illness	47	14.0
More than two illness	20	5.6
Health problem or illness caused by accident or injury within 2 weeks		
No	346	96.1
Yes	14	3.9
Household accident	11	3.1
Transportation accident	3	0.8

The past risk behaviors to develop Hypertension in the respondents were eating foods that were high salt, high fat and cholesterol, drinking alcohol, and smoking. It represented 44.4% of the respondents had food that were high salt and high fat and cholesterol, drinking alcohol, and smoking. 42.5% of the respondents were eating foods that were high salt, high fat and cholesterol. 6.1% of the respondents were drinking and smoking. 6.9% of the respondents had no risk behaviors to develop Hypertension. Table 8 also was shown the present behaviors of

the respondents toward high salt, high fat and cholesterol consumption, drinking alcohol, and smoking which represented 34.4%. 37.8% of the respondents had food that was high salt, high fat and cholesterol. 5% of the respondents were drinking and smoking. 22.8% of the respondents had no risk behaviors to develop Hypertension as shown in Table 4.5

Table 4.5: Life-style Hypertension risk factors in the elderly respondents.

Life-style	Quantity	Percentage
Risk behaviors to develop Hypertension		
Past behaviors		
High salt and high fat and cholesterol diet	153	42.5
Drinking, Smoking	22	6.1
High salt and high fat and cholesterol diet, Drinking, Smoking	160	44.4
No risk behaviors	25	6.9
Present Behavior		
High salt and high fat and cholesterol diet	136	37.8
Drinking, Smoking	18	5.0
High salt and high fat and cholesterol diet, Drinking, Smoking	124	34.4
No risk Behavior	82	22.8

61.1% of the respondents exercised in regular basic by walking (20%), and Aerobic (41.1%). 38.6% of the elderly respondents were lacked of exercise. In term of Hypertension knowledge, 67.2% of the respondents were aware of the Hypertension meanwhile 32.8% of the respondents had no been educated about Hypertension. Only 8.3% of the family member experienced with Tsunami disaster confrontation in their own family. 91.7% of the family member did not have the experience on Tsunami disaster as shown in Table 4.6

Table 4.6: Life-style Hypertension risk factors in the elderly respondents.

Life-style	Quantity	Percentage
Exercise		
Regular exercise	220	61.1
Walking	72	20.0
Aerobic	148	41.1
Lacked of exercise	140	38.6
Hypertension knowledge		
Yes	242	67.2
No	118	32.8
Tsunami disaster confrontation in the family		
No	330	91.7
Yes	30	8.3

In accordance with the blood pressure measurement among the respondents, 49.2% of the respondents had normal Systolic. Due to the Systolic level, 33.6% of the respondents were considered for Pre-hypertension, 13.9% of the respondents were fallen into Stage 1 Hypertension and 3.3% of the respondents were considered for Stage 2 Hypertension. The Table also included Diastolic measurement among the respondents. With regard to Diastolic level, 58.1% of respondents had normal Diastolic, 21.4% of the respondents were considered for Pre-hypertension, 17.5% of the respondents were Stage 1 Hypertension and 3.1% of the respondents were Stage 2 Hypertension as shown in Table 4.7

Table 4.7: Blood pressure measurement in the elderly respondents categorized by level of blood pressure.

Blood pressure level	Normal		Pre-hypertension		Stage 1 Hypertension		Stage 2 Hypertension	
	Quantity	%	Quantity	%	Quantity	%	Quantity	%
Systolic	177	49.2	121	33.6	50	13.9	12	3.3
Diastolic	209	58.1	77	21.4	63	17.5	11	3.1
Systolic and Diastolic	95	26.4	146	40.6	101	28.0	18	5.0

Part 2 The evaluation of potential among the elderly in performing Basic Activities of Daily Living.

The study of capability among the elderly in performing Basic Activities of Daily Living for each activity in Table 4.8 found that there were 5 activities identified by the respondents that they were able to perform by themselves (Independent). Those activities were feeding, grooming, mobility in household, dressing up, and bathing. 99.7% of the respondents reported that they were able to perform those activities independently. On the one hand, Bedding transfer and mobility in household were the activities that required supervision and represented 0.3% of the respondents. 0.6% of the respondents specified that toilet use, stair use, bowel and bladder were the activities required support from care taker. In the mean time, feeding, grooming, bedding transfer, and dressing up were also indentified by 0.3% of the elderly respondents as the activities required help from care taker. Furthermore, Bathing was the activity identified by 0.3% of the elderly respondents that they were unable to perform the activity and entirely depended on the care taker to support them as shown in Table 4.8

Table 4.8: The capability level of elderly in performing Basic Activities of Daily Living.

Activities	Capacity Level								Total	
	Independent		Supervision required		Help required		Dependent		Quantity	%
	Quantity	%	Quantity	%	Quantity	%	Quantity	%		
1. Feeding	359	99.7	-	-	1	0.3	-	-	360	100
2. Grooming	359	99.7	-	-	1	0.3	-	-	360	100
3. Bedding Transfer	358	99.4	1	0.3	1	0.3	-	-	360	100
4. Toilet use	358	99.4	-	-	2	0.6	-	-	360	100
5. Mobility in household	359	99.7	1	0.3	-	-	-	-	360	100
6. Dressing up	359	99.7	-	-	1	0.3	-	-	360	100
7. Using Stair	358	99.4	-	-	2	0.6	-	-	360	100
8. Bathing	359	99.7	-	-	-	-	1	0.3	360	100
9. Bowel	358	99.4	-	-	2	0.6	-	-	360	100
10. Bladder	358	99.4	-	-	2	0.6	-	-	360	100

Part 3 The questionnaire related to Operational Efficiency of Instrumental Activity of Daily Living.

The study of capability among the elderly in performing Instrumental Activity of Daily Living daily routine for each activity in Table 4.9 found that mobility out off the household, house keeping work, and managing finance were the activities that 99.7% of the respondents were able to perform by themselves (Independent). Whereas Inferiority, cooking and traveling by vehicles were identified by 99.2% of the respondents as the activities that they were able to perform by themselves (Independent). Traveling by vehicles was also identified by 2.8% of the respondents as the activities that required Supervision. 0.3% of the elderly

respondents specified that mobility out off the household and cooking were the activities required support from supervision. In the mean time, cooking was the activity identified by 0.6% of the elderly respondents that they were unable to perform the activity and entirely depended on the care taker to support them. Other activities that also entirely depended on the care taker were house keeping work, and managing finance resulted from 0.3% of the elderly respondents as shown in Table 4.9

Table 4.9: The capability of elderly in performing Instrumental Activity of Daily Living of 5 activities.

Activities	Capacity Level								Total	
	Independent		Supervision		Help		Dependent		Quantity	%
	Quantity	%	Quantity	%	Quantity	%	Quantity	%		
1. Mobility out off the household	359	99.7	-	-	1	0.3	-	-	360	100
2. Cooking	357	99.2	-	-	1	0.3	2	0.6	360	100
3. House keeping work	359	99.7	-	-	-	-	1	0.3	360	100
4. Managing finance	359	99.7	-	-	-	-	1	0.3	360	100
5. Traveling by vehicles	350	97.2	-	-	10	2.8	-	-	360	100

In respect to the comparison of disability in performing between basic daily routine and continuously daily routine of the elderly respondents found that the respondents were able to keep up with basic daily routine better than continuously daily routine as shown in Table 4.10

Table 4.10: The disability condition of the elderly respondents measured by BADL and IADL index.

Ability to perform daily activities	BADL		IADL	
	Quantity	%	Quantity	%
Without disability	359	99.7	359	99.7
With disability	1	0.3	1	0.3
Total	360	100	360	100

Part 4 The study of the relationship between Prevalence and Determinants of Hypertension among elderly in Dinudom Subdistrict

Hypertension among elderly identified with Demographic factor found that male could develop Hypertension more than female. Among Male group, 35.5% of male respondents developed Hypertension. On the other hand, 30.5% of female respondents developed Hypertension. In term of age, late aged elderly (75 or over years old) had more potential in developing Hypertension than early aged elderly (60-74 years old). 40.0% of late aged elderly respondents developed Hypertension while only 30.7% of early aged elderly respondents developed Hypertension. According to the marital status, the respondents who were single/ widowed/ divorced/ separated tended to develop Hypertension more than those who married. It represented 33.3% of the respondents who were single/ widowed/ divorced/ separated had hypertension and 31.1% of the elderly respondents who married had Hypertension. In regard to education background, the educated respondents develop Hypertension less than the uneducated respondents. 31.1% of the educated respondents develop Hypertension whereas 36.8% of the uneducated respondents develop Hypertension. The elderly respondents who were merchant/government worker had the significant higher

potential in developing Hypertension than those who were farmer. 57.1% of merchant/government workers developed Hypertension and only 31.8% of farmer developed Hypertension. Income Sufficiency also played a potential part in developing Hypertension. The respondents who had sufficiency income, developed Hypertension more than the respondents who had insufficiency income. 33.1% of the respondents with sufficient income developed Hypertension whereas 25% of the respondents with insufficiency income could develop Hypertension. As also shown in Table 4.11, Genetic heritable record was part of the study. The respondents without the immediate family member (genetic) with Hypertension tended to develop Hypertension more than those respondents who had the immediate family member (genetic) with Hypertension. 34.4% of the respondents, who did not have the immediate family member (genetic) experience Hypertension, developed Hypertension. In the mean time, 32.6% of the elderly respondents who had the immediate family member (genetic) experience Hypertension as shown in Table 4.11.

Table 4.11: The relationship between Demographic factor and Hypertension among elderly respondents categorized by gender, age, marital status, education, career background, income sufficiency and genetic heritable record.

Demographic factor	With Hypertension Quantity (Percentage)	Without Hypertension Quantity (Percentage)	P-value
Gender			
Male	66[35.5]	120[64.5]	0.316
Female	53[30.5]	121[69.5]	
Age			
Early aged elderly (60-74 years old)	83[30.7]	187[69.3]	0.121
Late aged elderly (75 or over years old)	36[40.0]	54[60.0]	
Marital Status			
Single/Widowed/Divorced/ Separated	38[33.3]	64[66.7]	0.320
Married	81[31.4]	177[66.6]	
Education level			
Educated	73[31.1]	162[68.9]	0.291
Uneducated	46[36.8]	79[63.2]	
Career background			
Farmer	111[31.8]	235[68.2]	0.078
Merchant/Government worker	8[57.1]	6[42.9]	
Income Sufficiency			
Sufficient	118[33.1]	238[66.9]	1.000
Insufficient	1[25.0]	3[75.0]	
Genetic heritable record			
Present	86[32.6]	178[67.4]	0.800
Not present	33[34.4]	63[65.6]	

The study of Hypertension in elderly respondents which identified by Life-style forces found that the respondents who did not smoke in the past behavior could have the potential in developing Hypertension more than the respondents smoked in the past behavior. 35.6% of the respondents who did not smoke in the past behavior had Hypertension whereas only 29.1% of the elderly respondents who smoked in the past behavior developed Hypertension. From the research about Alcohol drinking, the respondents who had the past behavior of drinking could develop Hypertension less than the respondents who did not drink in the past behavior. 35.2% of the elderly respondents who did not drink alcohol in the past behavior had Hypertension while only 26.9% of the respondents who drank in the past behavior developed Hypertension. Another study of salt consumption found that the respondents who had high salt consumption in the past behavior could develop Hypertension more than the respondents who did not have high salt consumption. The study showed that 36.5% of the respondents who had high salt consumption developed Hypertension. 23.7% of the respondents who did not have high salt consumption developed Hypertension. It is brought to the attention with the significant statistic level at $p < 0.05$. Table 4.12 was also shown that the respondents with high fat consumption in the past behavior could develop Hypertension more than the respondents who did not have high fat consumption. According to the study, 34.5% of the respondents who had high fat consumption developed Hypertension. 29.3% of the respondents who did not have high fat consumption developed Hypertension as shown in Table 4.12

Table 4.12: The relationship between Life-style and Hypertension among elderly respondents in Dinudom Subdistrict, Lumtap District, Krabi Province categorized by past behaviors of smoking, drinking, and High salt or high fat dietary.

Life-style	With hypertension Quantity (Percentage)	Without hypertension Quantity (Percentage)	P-value
Past behavior			
Cigarette Smoking			
Smoking	41[29.1]	100[70.9]	0.209
Non-Smoking	78[35.6]	141[64.4]	
Alcohol drinking			
Drinking	25[26.9]	68[73.1]	0.160
Not drinking	94[35.2]	173[64.8]	
Dietary			
High salt			
Yes	96[36.5]	167[63.5]	0.023*
No	23[23.7]	74[76.3]	
High fat			
Yes	90[34.5]	171[65.5]	0.381
No	29[29.3]	70[70.7]	

Hypertension in the elderly respondents who did not smoke in the present behavior and those who smoked are likely similar. 33.3% of the respondents who did not smoke in the present behavior had Hypertension while approximately 32.4% of the respondents who smoked in the present behavior developed Hypertension. From the research about Alcohol drinking, the respondents who had the present behavior of drinking could significantly develop Hypertension less than the respondents who did

not drink in the present behavior. The study reported that 34.9% of the respondents who did not drink alcohol in the present behavior had Hypertension while only 24.2% of the respondents who drank in the present behavior developed Hypertension. Another study of salt consumption found that the respondents who had high salt consumption in the present behavior could develop Hypertension more than those who did not have high salt consumption. 37.4% of the respondents who had high salt consumption in the present behavior developed Hypertension. 27.3% of the respondents who did not have high salt consumption developed Hypertension. Table 4.13 was also shown that the respondents who had high fat consumption in the present behavior could develop Hypertension more than the respondents who did not have high fat consumption. 35.5% of the respondents who had high fat consumption developed Hypertension and 30.1% of the elderly respondents who did not have high fat consumption developed Hypertension. Referring to the Body Mass Index, the respondents who had normal Body Mass Index had more tendencies in developing Hypertension than the respondents who had Body Mass Index over the normal level. 35.1% of the respondents who had normal Body Mass Index developed Hypertension whereas 30.1% of the respondents who had Body Mass Index over the normal level experience Hypertension. The tendencies of Hypertension development in the respondents who had regular exercise and lacked of exercise were nearly the same. 32.7% of the respondents who had regular exercise could develop Hypertension and 33.6% of the respondents who lacked of exercise could develop Hypertension as shown in Table 4.13

Table 4.13: The relationship between Life-style and Hypertension among elderly respondents in Dinudom Subdistrict, Lumtap District, Krabi Province categorized by present behaviors of smoking, drinking, high salt or high fat dietary and exercise.

Life-style	With hypertension Quantity (Percentage)	Without hypertension Quantity (Percentage)	P-value
Present behavior			
Cigarette Smoking			
Smoking	36[32.4]	75[67.6]	0.904
Non-Smoking	83[33.3]	166[66.7]	
Alcohol drinking			
Drinking	15[24.2]	47[75.8]	0.137
Not drinking	104[34.9]	194[65.1]	
Dietary High saturated salt			
Yes	77[37.4]	129[62.6]	0.054
No	42[27.3]	112[72.7]	
High fat			
Yes	72[35.3]	132[64.7]	0.311
No	47[30.1]	109[69.9]	
Body mass index			
Normal	72[35.1]	133[64.9]	0.366
Obesity	47[30.3]	108[69.7]	
Exercise			
Regular exercise	72[32.7]	148[67.3]	0.909
Lacked of Exercise	47[33.6]	93[66.4]	

In relation to Basic Activities of Daily Living performance, the elderly respondents who had the disability conditions developed Hypertension more than those who did not have the Disability Conditions. The study found that all of the respondents who had the disability conditions developed Hypertension while only 32.9% of the respondents who did not have the disability conditions developed Hypertension. Table 4.14 was also shown that both of the respondents with the duration of health problem more than six months or the duration of health problem within only two weeks could have the similar likelihood in developing Hypertension as shown in Table 4.14

Table 4.14: The relationship between Personal disease and Hypertension categorized by the disability to perform Basic Activities of Daily Living, and health problem.

Personal disease	With Hypertension Quantity (Percentage)	Without Hypertension Quantity (Percentage)	P-value
Disability Condition			
Yes	1[100.0]	0[0.0]	0.331
No	118[32.9]	241[67.1]	
Health problem			
Duration more than 6 Months			
Yes	98[34.4]	187[65.6]	0.336
No	21[32.3]	54[67.7]	
Within 2 weeks			
Yes	23[33.8]	45[66.2]	0.887
No	96[32.9]	196[67.1]	