# CHAPTER I

# INTRODUCTION

## 1.1 Problem Statement

Recently there has been an alarming increase in the number of cases with essential hypertension. Hypertension is a chronic disease that is an important public health problem in Thailand. It cannot be cured and the patients with the disease cannot return to a normal way of life. However, it is necessary for them to receive continuing care. More serious complications may develop and long-term nature of the disease can only heighten severity, thus increasing the need for long term planning. The cost of managing the disease is very high. Cost of laboratory diagnosis, expensive drugs and hospitalization are direct costs. In addition, there are many indirect costs, such as less monetary earning, disability, and less productivity. These adverse events often lead to expensive hospitalization, surgical procedures, and treatment involving high cost technologies. However, the cost of managing hypertension is lower overall than the sum of direct and indirect costs that may be avoided by reducing hypertension associated heart disease, stroke, and renal failure.

To control high blood pressure, patients' ongoing compliance with treatment courses is essential from the beginning of the diagnosis and for continuing long term care. The patient must strictly adhere to the prescriptive instruction and regularly practice self-care activities, which include weight reduction (in case of over-weight patients), restriction of high salt diet, control of high saturated fat food, exercise, quitting smoking and stress management. Practice of these self-care routines will enhance one another and be beneficial to hypertension treatment.

According to the health registration record of the hypertension clinic and the Urban Medical Center of Yasothon Hospital, there were 212 hypertension cases in 1998 and the number increased to 284 cases in 1999. Of these patients, the most prevalent age group was 50-59 years old, accounting for 31.3%. The second prevalent age group was 60-69 years old representing 29.2 % of the total incidence. Twenty six percent were residents of Yasothon municipal area and 5.3% of the patients did not turn up for follow up medical examination. It was also found that 31.6 % of the patients aged 60 years old and above developed other symptoms such as diabetes, cataract and cerebrovascular disease.

Control of high blood pressure within a normal level requires responsibility and compliance of patients in self-caring and in therapy courses. That is, patients must comply with dietary and medicine intake instruction and should change their lifestyle as advised by healthcare personnel (Haynes, Taylor, and Sackett, 1979 cited in Roberson, 1992:8 cited in Somjit Hanujareonkul et al., 1999:32). In addition, approximately half of hypertension patients neglected medical treatment in the first year post diagnosed

period. It was found that only 20-30 % of patients received medical treatment, therefore, up to 70-80 % were not under treatment (Haynes 1979 cited in Somjit Hanujareonkul et al., 1999:32).

Factors associated with patients' compliance with therapy courses involve psychological issue and external factors such as medical service and health service system. Moreover, it was found that the concept of self-caring were perceived differently between healthcare personnel and patient. That is, health personnel see self-care behaviour as routine practices for disease prevention and control and usually advise patients of such practices. However, patients see self-care behaviour as process associated with knowledge perception. Assessment and decision about management of illness symptoms of patients are resulted from analysis of their own perception or experience or obtaining advice from others such as social network bodies, professional health service network and other alternate treatment network prior to decision making. This inconsistency of self-care concept between health personnel and patients leads to non-compliance of hypertension patients with healthcare advice and finally has a negative effect on treatment outcome (Somjit Hanujareonkul et al, 1999).

Health promotion for self-care behaviours in hypertension patients of the Hypertension Clinic, Yasothon Hospital, provides group health education for a group of 5-10 patients. In case of new patients and other abnormal cases, such as, patients who were not able to control their high blood pressure level or who missed medical appointment, health education would be provided individually. However, in the Urban Medical Center, Yasothon Hospital, medical and health education services were

provided to patients only individually. It was found that most hypertension patients had misunderstanding about causes, symptoms and self-care behaviour to prevent other related disease, including dietary control, stress relaxation and exercise.

It could be seen that previous health education was typically one-way communication, that is, from a training nurse to patients. There was a lack of interaction between nurses and patients and among patients themselves and the patients were, therefore, not becoming aware of self-care behaviour. For positive and effective changes in health behaviour of hypertension patients and to prevent other hypertension-related disease, there is a need for new strategies that empower the patients to take care of themselves.

Empowerment through education may be the most appropriate approach. Participatory learning has been shown to be effective in many health education programs. The concept of participatory learning approach (PL) is a learning process with emphasis on actual participation of learners in teaching and learning process. It involves sharing knowledge and opinions among learners with teachers as their learning assistants. Learners are also able to experiment and practice the knowledge gained (Mental Health Department, 1997). Home visit strategies were employed to promote and support hypertension patients in solving self-caring problems. Home visits were also to encourage more practice of correct self-care behaviour in the patients.

As a health care personnel, who is responsible for promotion of healthcare behaviours in the patients of Yasothon urban community, this project investigator aimed

to develop health service techniques that are appropriate with conditions of each patient. The investigator, therefore, proposes to adopt participatory learning technique and home visit in this project. The project is a health promotion program emphasizing on self-care in preventing the development of other co-related disease among essential hypertension patients.

## 1.2 Background

### 1.2.1 Hypertension problem in Thailand

Hypertension is one of critical health problems. Since there is no warning sign apparent at the initial stage, it is often detected at a later stage when there is already hypertension condition. Treatment helps patients to live longer and lessen chances in developing other related disease. However, neglect of hypertension treatment could result in developing of other co-related diseases and possibly death.

The prevalence of essential hypertension accounted for 95% of all hypertension cases and majorities of hypertension patients were found to be 45-65 years old of age (Sararat Yongjaiyuth, 1988: 908 cited in Chamaiporn Maneeratanapan, 1997). The hypertension incidence rate was found to proportionally increase with age. The prevalence of essential hypertension was 55 % and 12.7 % of total population in Sweden and in Australia respectively (Somchai Lojaina et al, 1999:328). In the United States and United Kingdom, 20-25% of adult populations was diagnosed with hypertension (Keith Phillip, 1993). In Thailand, according to the 1991 National Health

Examination Survey Report, the prevalent rates of hypertension in male and female populations of Bangkok were 8.5% and 6.1% respectively, while those of the Central Region populations were 10.8% and 12.6% respectively. The prevalent rates in male (3.2%) and female (3.3%) populations of the Northeastern Region were similar to those of the Southern Region but lower than those of the Central and the Northern Regions as shown in Table 1.1.

**Table 1.1 Prevalent rate of hypertension in Thailand in 1991**

| **Area** | **Sample size** | **Limit SBP/DBP (mm.Hg)** | **Age** | **Rate (%)** |
|---|---|---|---|---|
| Bangkok | 1606 | > 160/95 | ≥ 15 | Male 8.5<br>Female 6.1 |
| Central | 2809 | > 160/95 | ≥ 15 | Male 10.8<br>Female 12.6 |
| Northern | 2709 | > 160/95 | ≥ 15 | Male 3.7<br>Female 5.0 |
| Northeastern | 5214 | > 160/95 | ≥ 15 | Male 3.2<br>Female 3.3 |
| Southern | 2789 | > 160/95 | ≥ 15 | Male 3.2<br>Female 2.6 |

Source: National Health Examination Survey, 1991 cited in Pandii, W.,1996.

In addition, the prevalence in total country populations was found to be 5.41% with 7.67 % rate for the age group of 30 years old and above. The prevalent rate increases proportionally with age and body weight. Within the survey populations only 10.2% were aware of their hypertension condition and 71.3% of this group received medical treatment (Penchan Pradabmuke, 1999). The 1998 report of health care providers under the Ministry of Public Health, indicated that there was significantly increasing tend in the rate of out-patient with vascular diseases associated with high blood pressure from 1994 to 1998. This corresponds to the study of the Medical Health Department (No publishing years: 31 referred in Penchan Pradabmuke, 1999), which also found an increasing tendency in medical treatment service rate within health care providers every year, and in 1993 accounting for 92.7% per 100,000 populations. Similarly, the incidence rate of lifestyle related diseases, such as high blood pressure, gastro-intestinal disease and gastritis, found among in-patient also demonstrated continuously rising tend (The Office of Health Policy and Planning, The Ministry of Public Health, 2000: 162-163).

At Yasothon Hospital, the health registry during 1996-2000 also indicated an increasing rate of out-patient and in-patient with vascular disease, hypertension and cerebrovascular disease as illustrated in Table 1.2.

**Table 1.2 Number of OPD and IPD patients with cardiovascular, hypertensive and cerebrovascular diseases at Yasothon Hospital in 1996-2000.**

| Type of Patient/ Disease | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|
| **OPD patients** | | | | | |
| Cardiovascular diseases | 4290 | 5082 | 6189 | 6992 | 9264 |
| **IPD patients** | | | | | |
| Hypertensive diseases | 229 | 251 | 377 | 470 | 565 |
| Cerebrovascular diseases | 179 | 244 | 250 | 278 | 269 |

Source: Academy and Quality Group, Yasothon Hospital, 2000.

At present, trend of death causes in Thai populations has dramatically changed. There is an increasing incidence of diseases related to improper behaviours such as lack of exercise, intake of diets with high fat or cholesterol, and stress. These factors lead to an increasing incidence of cardiovascular disease and hypertension. It was found that death rates caused by cardiovascular disease, cancer, and accidents tend to continuously rise (The Office of Health Policy and Planning, The Ministry of Public Health, 2000: 74-75).

The mortality rate caused by hypertension and cerebrovascular diseases during 1988-1993 period indicated a rapid and continuous increase moving from the 5$^{th}$ rank to the 4$^{th}$ rank of all casual factors. This record corresponded to Phase 1 study of death causes in Thailand conducted by Chanpen Chuprapawan et al (2000) in 5 provinces including Khonkean, Nakonsrithamarat, Ranong, Nakhonsawan, Nan, and 4 Districts of Bangkok. The results indicated some evidence of death cases caused by non-

communicable diseases mainly cancer, high blood pressure, and cerebrovascular disease among the group of working people age of 25-44 years old, while in the older age group of 45-59 years old and the group of 60-74 years old, the first and second major death causes were clearly due to cancer and hypertensive-cerebrovascular disease respectively. For the group of elderly people age 75 years old and above, the first major death cause was due to aging and the second major cause was hypertensive-cerebrovascular disease.

In Thailand, hypertension cases resulting in death were commonly due to developing of cerebrovascular disease or paralysis conditions, rather than causing from heart disease. These unhealthy conditions constitute burden of the family and society as well as burden of health care service system (Chanpen Chuprapawan et al, 2000), therefore, hypertension of essential type is considered to be critical issue in Thailand and in Yasothon Province, which deserves urgent attention.

### 1.2.2 Type of hypertension

The World Health Organization has defined hypertension as having blood pressure greater than 140/90 mm.Hg. The illness has been further classified as mild, moderate, and severe. Patients with mild hypertension have a diastolic pressure between 90 and 104 mm.Hg and those with diastolic pressure between 105 and 114 mm.Hg are diagnosed as severe hypertension. The diagnosis of hypertension is based on at least three blood pressure measurements, taking one week apart under resting conditions. These measurements are then averaged in order to classify the degree of

hypertension. Detailed classification of hypertension by WHO (1993: 396) and Joint National Committee (JNC.V, 1993:161) is shown in Table 1.3.

**Table 1.3 Severity of hypertension**

| **WHO** | | | **JNC.V** | | |
|---|---|---|---|---|---|
| **Level** | **Systolic (mm.Hg)** | **Diastolic (mm.Hg)** | **Level** | **Systolic (mm.Hg)** | **Diastolic (mm.Hg)** |
| Normal | < 140 | and < 80 | Normal<br>High normal | < 130<br>130-139 | < 85<br>85-89 |
| Mild hypertension | 140-180 | and/or 90-105 | High blood pressure | | |
| Mild-border line | 140-160 | and/or 90-95 | Level 1 (Mild) | 140-159 | 90-99 |
| Moderate-Severe | ≥ 180 | and/or ≥ 105 | Level 2 (Moderate) | 160-179 | 100-109 |
| High systolic pressure | ≥ 140 | and/or ≥ 90 | Level 3 (Severe) | 180-209 | 110-119 |
| High systolic pressure-borderline | 140-160 | and ≥ 90 | Level 4 (Very severe) | ≥ 210 | ≥ 120 |

Source: WHO, 1993 and Joint National Committee, 1993.

In addition, hypertension can be classified into two types according to its casual factors:

1. Primary or essential hypertension accounts for 95% of all hypertension incidences. Causes of this type of hypertension cannot be identified.

2. Secondary hypertension is caused by several factors, mostly due to kidney diseases, pituitary diseases, clogging of aorta vessels, high blood pressure in pregnant women, and some types of medications. The secondary hypertension can be cured if its casual factors are resolved. A special diagnosis in some medical centers could identify this type of hypertension to be as high as 35% of total incidence (Williams and Braunwald, 1987: 1025).

### 1.2.3 Management of hypertension

Through the immediate goal of treatment for hypertension is to reduce blood pressure level as much as possible and ideally to within the normative range, the long-term objective is to reduce the incidence of renal and cardiovascular disease in hypertension patients. The required blood pressure range for adolescent or young patients is between 120/80 and 130/80 mm.Hg. In elderly patients with both systolic and diastolic hypertension, the target blood pressure is below 140/90 mm.Hg, where as the target blood pressure of systolic hypertension patients is less than 140 mm.Hg of systolic pressure (WHO,1930).

Treatment for hypertension involves both medication therapy and non-medication approach. The later is involved with changing of lifestyle of hypertension patients that could help to reduce amount of anti-hypertensive drug intake, lessen drug side effect and reduce the cost. In addition, lifestyle change could reduce the risks of cardiovascular disease. Such non-medication treatment includes weight reduction in overweight patients, control of dietary with high salt, restriction of high calorie and

saturated-fat diets, exercise, avoiding smoking and alcohol consumption and finally stress management. Proper practice the above behaviour will positively enhance one another, for the maximum result all aspects of lifestyle change should, therefore, be adopted (Somjit Hanujareonkul and Orasa Panpakdee, 1999).

**Weight Reduction**. Excess body weight-body mass index (weight in kilograms divided by height in meters, squared) of 27 or greater, is closely correlated with elevated blood pressure. In overweight patients with hypertension, weight reduction enhances the blood pressure lowering effect of concurrent antihypertensive agents and can significantly reduce concomitant cardiovascular risk factors such as diabetes and dyslipidemia. Patients with hypertension monitored weight reduction program involving caloric restriction, low fat, and increased physical activity. Unfortunately, there are problems in achieving adherence to weight reduction programs and in maintaining weight loss over time, and there is a need to investigate behavioral strategies to improve compliance.

**Dietary Sodium,** in the form of sodium chloride or table salt, has significant link with high blood pressure level. Restriction of diets with high sodium content can help lessen high blood pressure level. Recommended daily intake of sodium is 2,000 mg. or less with maximum of 5 g. of salt per day.

**Potassium.** High dietary potassium intake may protect against developing hypertension and improve blood pressure control. Inadequate potassium intake may increase blood pressure. If hypokalemia occurs during diuretic therapy, additional

potassium may be needed from potassium containing salt substitutes, potassium supplements, or potassium sparing diuretics.

**Dietary Fats.** Dyslipidemia is a major independent risk factor for coronary artery disease, therefore, dietary therapy and, if necessary, drug therapy or dyslipidemia are an important adjunct to antihypertensive treatment.

**Avoid Alcohol Intake.** Excessive alcohol intake is an important risk factor for high blood pressure, it can cause resistance to antihypertensive therapy, and is a risk factor for stroke. (Puddy, L. B., Parker, M., Beilin, U., & Vandongen, R., 1992 cited in Chukumnerd, P., 1999) Such amounts do not raise blood pressure and have been associated with lower risk for congestive heart disease. Significant hypertension may develop during an abrupt withdrawal from heavy alcohol consumption but recedes a few days after heavy alcohol consumption is reduced.

**Avoid smoking.** Cigarette smoking is a powerful risk factor for cardiovascular disease, and avoidance of tobacco in any form is essential. Smokers have 20 times higher risk to stroke than non-smokers and normally have high blood pressure. Those who continue to smoke may not receive the full degree of protection against cardiovascular disease from antihypertensive therapy.

**Exercise.** Regular aerobic exercise is adequate in achieving at least a moderate level of physical fitness and can enhance weight loss and functional health status and reduce the risk of cardiovascular disease and all cause mortality. Exercises are running,

bike riding, swimming, and fast walking. Anaerobic exercise or Isotonic such as weight rising is not appropriate for them and it can increase blood pressure level. Beneficial effects of exercise upon blood pressure level may reflect these changes or may be related to psychological effects since regular exercise is also associated with increased self-efficacy and positive mood states, as well as providing an escape from the experience of daily stresses.

**Relaxation from Stress.** Emotional stress can raise blood pressure acutely. Relaxation therapies were progressive muscle relaxation, Meditation, yoga and bio-feedback. However, the available literature dose not support the use of relaxation therapies for definitive therapy or for prevention of hypertension. One study found no effect of stress management on prevention of hypertension. However, check up blood pressure at home is a relaxation from stress. They fell to self -control blood pressure (Somjit Hanuchareonkul, and Orasa Punparkdee, 1999).

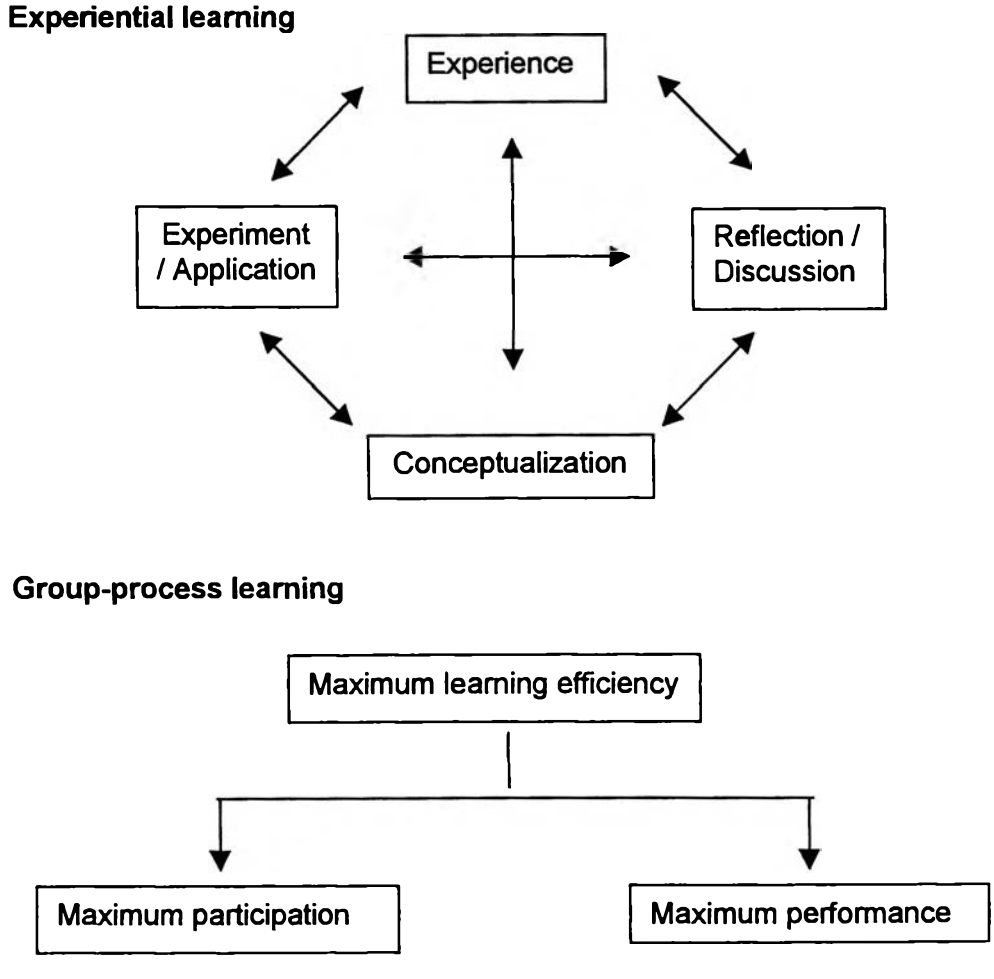
### 1.2.4 Participatory learning

Participatory Learning in this study is a process of empowerment and rising of self-esteem by encouraging the participants to share their ideas, experiences and knowledge with each other. This helps them to be able to identify their knowledge and make decision in prevention of hypertensive complications, then leading to core practices under atmosphere of trust and openness between the facilitator and participants.

**Concept of participatory learning**

Participatory learning is an effective teaching and learning approach for personal development of knowledge, attitudes and skills. The basic structure of participatory learning process consists of experiential learning and group process. Every participant effectively uses their previous experience by sharing them with other and are able to employ the knowledge in their actual practice.

**Figure 1.1 Principal component of participatory learning**



Participatory learning is a process that emphasizes on learners as a learning center and consists of the following basic principles shown in Figure 1.1.

1. **Experience learning** is when learners develop knowledge from their previous experience. It can be characterized as follows:
   - Learning from previous experience of the learners
   - There is no lecturing session, however, learners have to be involve in activities at all time, so called an active learning approach.
   - There is communicative interaction between teachers and learners and among learners themselves.
   - Communicative interaction leads to expansion of existent knowledge
   - Adoption of all communication skills that are speaking, writing, drawing and role-playing.

**Components of experience learning**

| | |
|---|---|
| **1. Experience** | The trainers advise the trainees to use their own experience to develop their knowledge. |
| **2. Reflect and Discussion** | The trainers advise the trainees to have various activities to challenge their opinion, learn from their group and appreciate their opinions of their group. |
| **3. Understanding and conceptualization** | The trainees understand the concept. Either the trainees start the conceptualization and the trainers continue till completely. Alternatively, the trainers lead the trainees then the trainees continue until this conceptualization is completely. |

| | |
|---|---|
| **4. Experimental / Application** | The trainees apply their knowledge to use in a similar situation of a different situation from their practice. |

Source: Ministry of Public Health: 1999

Organizing of education activity session or a training program by participatory learning requires all 4 components, which also requires dynamic relationship among the components. However, sequence setting of activities is flexible. Duration for each component is not essential to be equal depending on time requirement for specific activities in each component.

2. **Group-process learning** supports learners to participate and perform tasks at their maximum capability.
    - Maximum participation of the learners is dependent on grouping design, which could range from 2 to a larger group. Each group type has its own advantages and disadvantages.
    - Maximum performance can be achieved by task designing or by assigning learners to complete activities according to the learning objectives set in the education plan.

### 1.2.5 Home visit

Home visit is one health care strategy that nurses play a major role as a supervisor and supporter for patient care at home. Nurses will provide health care advice and promote healthy and hygienic condition, disease prevention, correction and prevention of various disabilities, and general patient care at home. The approach

emphasizes on participation of patient and family members and health care problems are identified according to correspondent perception of situation between the visiting nurse and the patient. The study of Upapin Prasan-atikhom and colleagues (1991) pointed out that persistent patients could perform their daily healthcare routines when a nurse visited to their home at the 6$^{th}$ week post hospital discharge, better than the first and second week post hospital discharge. In addition, the study of Wanastri Rattanalump et al (1997) found that home visit to mothers of 1-3 year old children diagnosed with acute upper-respiratory infectious disease, regularly once a week for 3 weeks, helped the mothers improve knowledge, attitude, perception and behaviour in caring for their children, more than the mother who were not home-visited.