

CHAPTER III



PROPOSAL

AN INTERVENTION TO IMPROVE SELF-CARE PRACTICES FOR PATIENTS WITH HYPERTENSION IN PASAK SUB-DISTRICT, CHIANG RAI PROVINCE

3.1 BACKGROUND

“A silent killer” is a phrase frequently applied to hypertension since one can have it without having any symptoms. The symptoms usually appear only after complications have occurred. Hypertension is a major risk factor to other cardiovascular diseases such as stroke, heart attack, and congestive heart failure. It is the most common cardiovascular disorder, one of the major risk factors of cardiovascular mortality, which accounts for 20-50% of all deaths. It has been estimated that some 50 million Americans have high blood pressure, and about one-third (15 million) do not know it (WHO, 2002).

Due to the changes of people’s life such as dietary behavior, alcohol consumption, smoking, lack of physical activities, and stressful daily routines, non-communicable diseases have become the leading cause of health problems.

Cardiovascular diseases, during 1986 to 1997, have risen among Thais, from 37.4 to 72.1 in 100,000 people (Ministry of Public Health, 1999; p.65).

According to Public Health Statistics, the rate of hypertension cases per 100,000 patients visiting government hospitals from 1996 to 1998 was rising from 147.3, 158.0, to 169.6 respectively. Moreover, the significant increase was in the northern region (Public Health Statistics, Division of Health Statistics, 1996-98).

The objective of treating hypertension is to control blood pressure to a normal level in order to reduce the risk of complications such as cardiovascular disease, kidney damage, stroke and arteriosclerosis. The awareness on food consumption, weight control, exercise, meditation, and keeping up the schedule with the physician can ensure to control and prevent high blood pressure. It has been found, however, that most patients are non-compliant, probably because the signs and symptoms of hypertension at the early stage are insidious, making patients unaware of this illness.

Even though hypertension cannot be cured, the relevant severity and complications can be controlled if the patients get treatment regularly and has proper self-care. Therefore, they need to know how to take care of themselves, Providing up-to-date information and receiving regular treatment should be emphasized.

Several studies have focused on the management of hypertension, such as the study in a rural community in Japan during 1963-1987 (Iso, H., et al, 1998). This study showed that a hypertension control program could reduce the incidence of stroke by 45-65%. The study in the United States of America in 2000 also indicated

that the knowledge level increased from 58% to 92%. The number of patients on self-care increased as well. For example the percentage on patients taking regular medication increased from 34.4% to 74.2% after the educational program on hypertension management (Konrady, AO., et al, 2001).

Many studies have been conducted in various parts of Thailand. The results showed that the program developed by the application of protection motivation theory could be used to prevent the complications of patients with hypertension (Wisessatom, 2001; Chusuparin, 2000; Wungpeng, 1999). Most of the studies were conducted in the hospitals, and few studies were set in the community. A self-care development model for patients with essential hypertension in Yasothorn Province, for example, was conducted in the community. The patients engaged in participatory learning process so that they gained knowledge on self-care (Sroikham, 2001).

3.2 SITUATION ANALYSIS OF THE PROBLEM ON THE PATIENTS WITH HYPERTENSION IN PASAK SUB-DISTRICT

According to the annual report of Pasak Health Center, the number of patients with hypertension doubled each year, from 15% to 30%. In 2002, 354 OPD patients were diagnosed with hypertension. About 15% of the patients with hypertension had fluctuations and poor management of dietary intake, exercise, and relaxation. The percentage of the moderate, severe, and very severe hypertensive cases in Pasak Sub-district, were 30, 12 and 9 respectively. The most common complications associated with hypertension were coronary artery disease, cerebrovascular disease, and renal

disease. In addition, 20% of patients did not return for follow-up that indicated the failure of a routine counseling.

A pre-survey using in-depth interviews was conducted for 4 patients with hypertension, 2 males and 2 females. This survey was to assess the perceptions of patients on severity, vulnerability to complications of hypertension, self-efficacy and response of efficacy. The result showed that all respondents realized that hypertension could not be completely cured. Two of them perceived that hypertension could cause heart and renal diseases. Three of the respondents did not know that cerebrovascular disease, which leads to paralysis and death, could develop from untreated hypertension. None of them knew that blindness is also a complication from hypertension. Therefore, poor perceptions on the severity of complications of hypertension were found among the respondents.

All respondents were aware of the importance of low salt intake and low fat dietary. However, they were reluctant to control when cooking or eating. They sometimes could not avoid adding salt to improve the taste of food. Both men were still smoking and drinking alcohol everyday. They believed that smoking and drinking alcohol could make them relax after work. Three-fourth of the respondents did not exercise regularly because they did not have time, and did not know how to exercise. For medication, all of them knew that taking medicine regularly would prevent them from developing complications. Neither men were concerned with physical check up, because they were still on medication. Without any symptoms, they preferred not to see a doctor.

The information from the pre-survey study indicated that patients with hypertension are not aware of the severity and vulnerability of developing complications. Thus, they neither changed their eating habits, still consuming salty and fatty food, nor did any exercises. In order to avoid complications, the patients with hypertension need good self-care practices. Hence, self-care promotion activities should be organized to increase awareness of the severity and vulnerability of developing complications. Family members should take part in supporting to reduce hypertension. This is extremely important to promote a self-care program with social support to motivate self-care practices among patients with hypertension, in order to save cost of the complications that might occur in the future. Self-care promotion activities will improve the patients' perception on the severity and vulnerability of complications of hypertension, as well as promote the prevention of complications.

3.3 RESEARCH QUESTIONS:

1. Can a self-care promotion program organized for patients with hypertension improve the perception on severity and vulnerability of complications, self-efficacy and response efficacy of hypertension preventive behaviors?
2. Can a self-care promotion program given to patients with hypertension improve their self-care practices?

3.4 OBJECTIVES:

3.4.1 General objectives:

To assess the effectiveness of a self-care promotion program to improve self-care practices among patients with hypertension

3.4.2 Specific objectives:

1. To develop the appropriate self-care promotion program for patients with hypertension
2. To improve the perception on severity and vulnerability to complications, self-efficacy, and response efficacy of patients with hypertension
3. To improve self-care practices of patients with hypertension through a self-care promotion program
4. To compare the perception and self-care practices between the study group and control group
5. To compare the perception and self-care practices before and after intervention in the study group and control group

3.5 HYPOTHESIS:

A self-care promotion program can improve perception and self-care practices of patients with hypertension.

3.6 OPERATIONAL DEFINITION:

A self-care promotion program is a process of health promotion activities in order to improve the perception on severity and vulnerability to complications; self-efficacy, and response efficacy of behavior changes--such as dietary intake, less alcohol and smoking consumption, exercise, relaxation, and taking medication.

Perception in this study refers to the perception of patients with hypertension on these following four components; severity of complications of hypertension,

vulnerability to complications, self-efficacy, and response efficacy of preventive behavior for preventing complications.

Threat appraisal is the perception that leads to behavioral changes, which may result in personal attitude whether to accept or reject those changes. This also includes the perception on severity and vulnerability to complications that can be measured by using the questionnaire.

Perceived severity towards complications of hypertension means the perception of an individual who has hypertension that he or she may develop severe complications-- which can lead to deformities, paralysis, and death.

Perceived vulnerability to complications of hypertension means the perception of patients with hypertension that they are prone to develop complications of hypertension such as cardiovascular, and renal diseases, and retinopathy.

Coping appraisal refers to the factor that has an influence on behavior changes. This also includes the perception on severity of complications and vulnerability to complications that can be measured by using questionnaire.

Perceived self-efficacy refers to the perception of patients' ability to perform a particular action or response to some health-behavior changes. Some examples of self-efficacy leading to health-behavior changes are low salt and fat intake, less smoking and alcohol consumption, exercise, relaxation, taking medicine and follow-up appointments with a physician.

Perceived response to efficacy of preventive behavior in preventing complications refers to the assessment of effectiveness of preventive behavior in preventing complications. Asking the respondents towards dietary intake, smoking and alcohol drinking behaviors, exercise, relaxation and medication can measure the patients' confidence on preventive behavior.

Self-care practices are defined as activities or behaviors that the patients with hypertension do or avoid in order to maintain their health, such as dietary intake, less alcohol consumption, exercise, medication, and stress management.

Social support refers to the support from family members and peers who remind the patients on health behavior and give advice to support and monitoring self-care.

3.7 CONCEPTUAL FRAMEWORK:

The Protection Motivation Theory (PMT)

Protection Motivation Theory offers a social psychological perspective, similar to the Health Belief Model (HBM), as an approach to motivate health protective behavior. PMT and HBM emphasize on the cognitive processes and attitude on behavior change. PMT model not only explains why people engage in unhealthy practices, but also offers suggestions for changing those behaviors (Rogers & Prentice – Dunn, 1986:154).

PMT theory focuses primarily on health threats or fear appeals to change behavior by emphasizing the consequences of health-damaging behavior. Originally,

the theory incorporated three focal cognitive appraisal processes: Perceived vulnerability to health threat, perceived seriousness of health threat, and perceived effectiveness of responses directed toward preventing the threat. The theory was revised to incorporate a fourth factor, self-efficacy, which is adapted from Bandura's social cognitive theory.

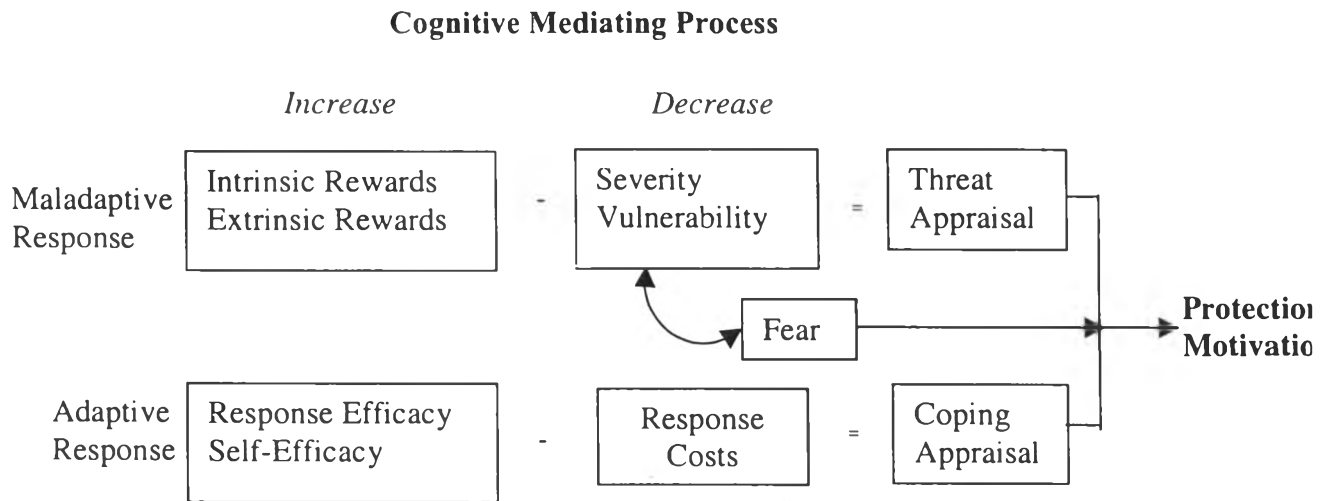


Figure 3.1 Cognitive Mediating Process

Sources of information on health threat initiate from two cognitive processes, threat appraisal and coping appraisal. The maladaptive response process is evaluated from the increase or decrease factors that resulted in threat appraisal. The maladaptive action can be enacted behavior such as beginning to smoke, or a current behavior such as not wearing a seat belt. Variables that increase the likelihood of the maladaptive response are intrinsic rewards (e.g. bodily pleasure) and extrinsic rewards (e.g. social approval). The factors that probably reduce the maladaptive response are the level of severity of threat, and perception on vulnerability to the threat. Fear arousal influences the perception of severity but has only an indirect effect on the eventual behavior enacted. The total threat appraisal is an algebraic sum of the variables that increase and decrease the maladaptive behavior likelihood.

An individual engages coping appraisal through the process of adaptive response depending on the increase or decrease factors. Thus, the judgement on efficacy of a preventive response will avert the perceived threat (response efficacy) plus the assessment of one's ability to successfully initiate and complete the adaptive response (self-efficacy). The self-efficacy component is crucial to the successful avoidance of the threatening situation. An important feature of PMT, the explicit role of personal mastery, has been neglected in virtually all expectancy-value theories. The implication, therefore, is the need to have an effective alternative to the maladaptive health behavior that is not sufficient. One must also believe in oneself the capability of carrying out the preventive regimen. It should be noted that an individual's sense of self-efficacy conceptually independent of the barriers referred to the Health Belief Model (HBM). Therefore, a person with a strong sense of self-efficacy might easily overcome any barriers, while a person with a weak sense of self-efficacy might be overwhelmed by some barriers. Self-efficacy influences not only the initiation of the coping response, but also the amount of energy expended and the person's persistence in the face of obstacles.

Response efficacy and self-efficacy evaluations are factors increasing the probability of making the adaptive response. Decreasing the likelihood are response costs. Response costs may consist of "inconvenience, expense, unpleasantness, difficulty, complexity, side effects, disruption of daily life, and overcoming habit strength." Coping appraisal is a total of the efficacy components minus any costs with the adaptive response.

PMT assumes that protection motivation is maximized when: (i) the threat to health is severe: (ii) the individual feels vulnerable: (iii) the adaptive response is believed to be an effective means for averting the threat: (iv) the person is confident in his or her abilities to complete successfully the adaptive response: (v) the rewards associated with the maladaptive behavior are small: and (vi) the costs associated with the adaptive response are small. Such factors produce protection motivation and, subsequently, the enactment of the adaptive, or coping response.

CONCEPTUAL FRAMEWORK ON:

AN INTERVENTION TO IMPROVE SELF-CARE PRACTICES FOR PATIENTS WITH HYPERTENSION IN PASAK SUB-DISTRICT CHIANG RAI PROVINCE

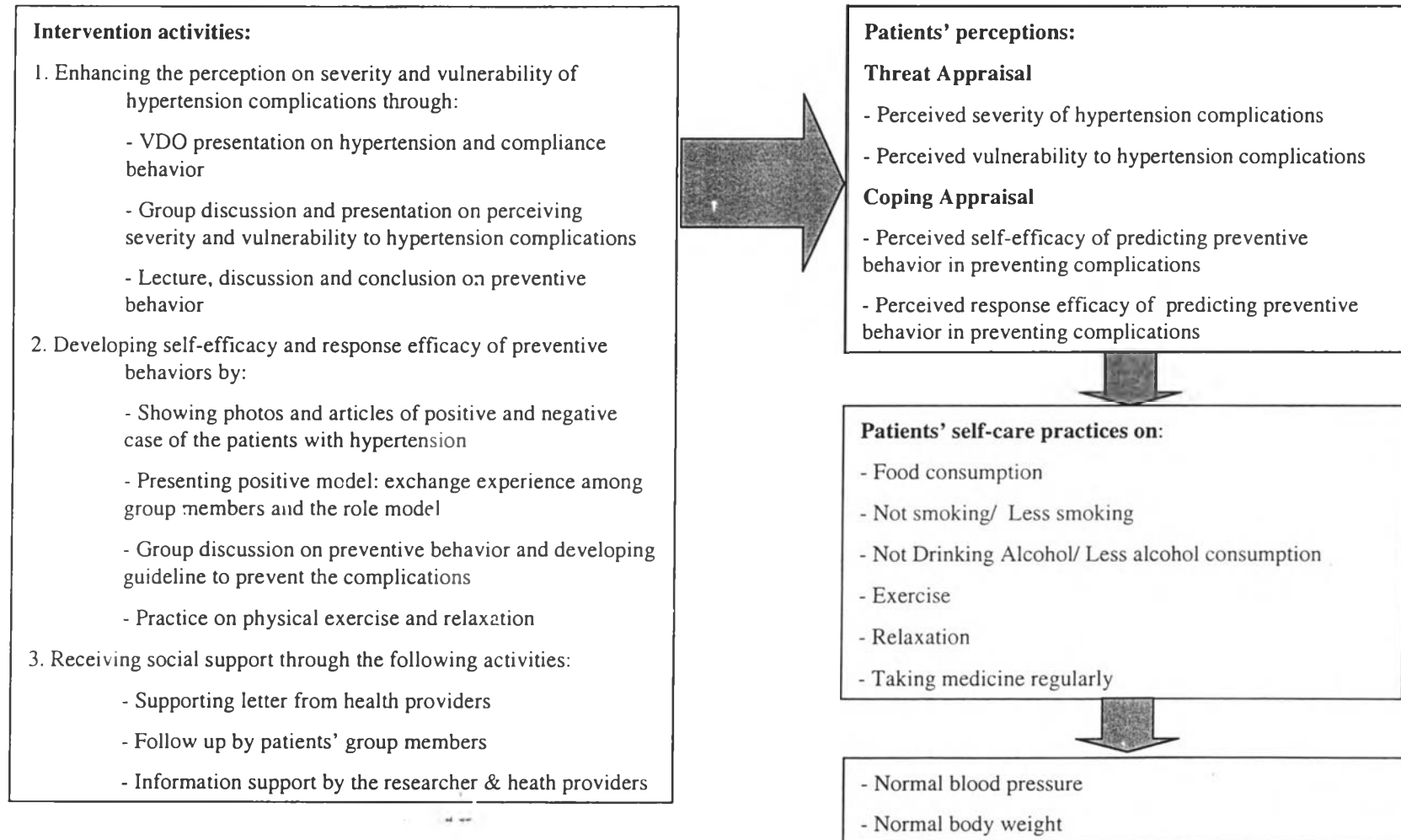


Figure 3.2: Conceptual Framework

3.8 RESEARCH METHOD

3.8.1 Study design:

Quasi-experimental design will be applied for this study. Pretest and posttest are then introduced in order to compare the differences between before and after intervention. The effective intervention will be evaluated from the selected self care promotion program.

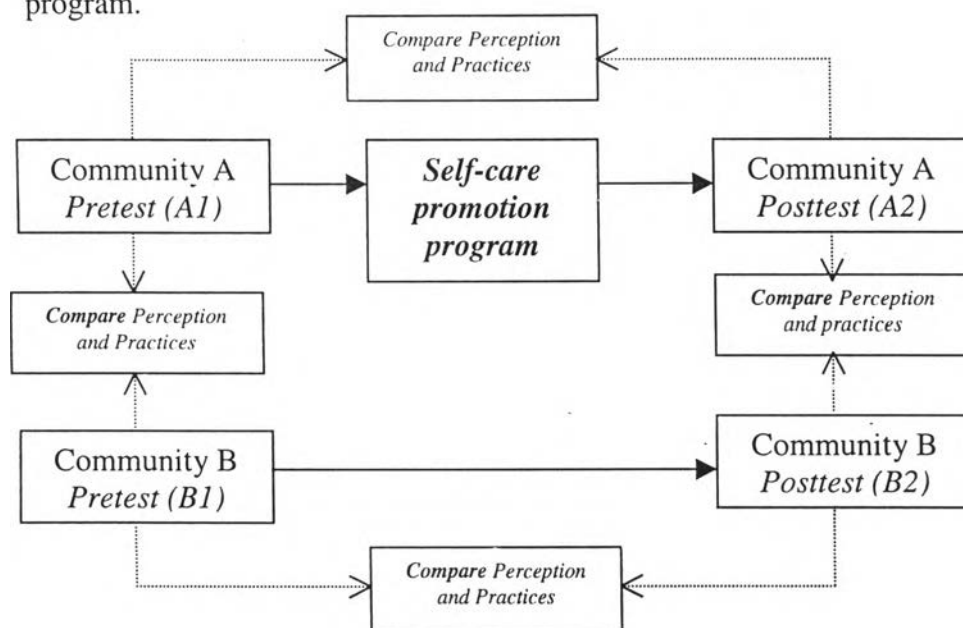


Figure 3.3 Study design

3.8.2 Study population

Study Group:

The setting of the study is located in Pasak Sub-District, Chiang Rai province. The patients with hypertension will be encouraged to participate in the self-care promotion program through these following actions:

1. Public Announcement: A self-care promotion program and the importance of self-care practices will be promoted through public announcement. The villagers will be informed about the severity of hypertension complications and that they may cause

deformity or death. The patients who are interested in the program will be asked to register at the Pasak Health Center. The announcement will take about two months (twice a week, from 7.00 – 8.00 p.m.) before the program. On Hypertension Clinic Day, the patients with hypertension will be informed and encouraged to join the program by the health staff and researcher.

2. The poster of self-care program will be posted at the health center. The poster contents will inform the severity of hypertension and the importance of self-care practices.
3. About fifty patients with hypertension will be recruited in the program by volunteering.

Control Group:

Mae Kom Sub-District will be chosen as a control group in this study. Based on the primary data of the study group--the similar socioeconomic and demographic conditions--the other community will be selected to compare the perception on severity and vulnerability, and self-care practices..

Inclusion and Exclusion criteria

Inclusion criteria

The patients with hypertension who live in the study area

Exclusion criteria

- The patients with hypertension who have severe illness, or mental problem, or unable to speak
- The patients who are unwilling to join the entire program

3.8.3 Data collection instrument:

Interview questionnaire will be used in order to measure the perception and practices of the respondents. The questionnaire will be consisted of five parts as follows:

Part I: Socio demographic data: questions about age, gender, education, household income, body weight, height, and medical history. This part attempts to identify the general characteristics of the respondents.

Part II: The perception of patients with hypertension on threat. Three rating scales will be applied with the subjects being asked to respond “yes”, “no” and “not sure.”

a) *The perception of severity of hypertension complications:* A set of statements in this part aims to measure the subject’s understanding on the complications of hypertension.

b) *The perception on vulnerability to the complications of hypertension:* This part consists of thirteen questions testing the perception on vulnerability such as dietary intake, exercise, stress, smoking, drinking alcohol and medication.

Part III The perception of self-efficacy: A set of statements designed to assess the subject’s confidence to do self-care practices such as controlling dietary intake, less smoking and alcohol consumption, exercising, relaxing and taking medication. This set will consist of 17 questions measuring confidence ranking from very confident, moderate confident, and less confident.

Part IV The perception on response efficacy of preventive behavior to prevent complications: Eleven questions will be asked based on the consequences of controlled hypertension such as reducing risk on cardiovascular, renal, and cerebrovascular disease, and retinal arteries. The questions are designed for the respondents to choose whether they agree, undecided, or disagree.

Part V self-care practices of patients with hypertension: The patients with hypertension will be asked about their current self-care such as dietary intake, relaxation, exercise, smoking, alcohol consumption, and medication. In short, the patients' actual self-care practices will be investigated.

Establish quality of the questionnaire instrument:

The instrument will be based on textbook, literature review, and related study. Two experts will specify pattern, content validity and construct validity of the questionnaire. The questionnaire will be developed after gathering the suggestion and recommendation from the experts.

The questionnaire must be tested with the similar characteristics of the study group. Therefore, thirty patients with hypertension in Mae Chan District, a study group, will be chosen to test for reliability of the questionnaire. Reliability test for the questionnaire was estimated in the chapter IV: Data Exercise.

3.9 THE INTERVENTION ACTIVITIES:

Purpose of the intervention

In this study, self-care program is to improve self-care practices or lifestyle changes of patients with hypertension. Since the pre-survey indicated that there were poor perception and self-care practices in the study group, providing information to the patients with hypertension will be focused during developing program activities. Some activities will be developed and modified based on the background and the result from baseline phase. Therefore, it should be oriented to the goals in order to modify the patients' lifestyle.

In this study, the activities will be performed into 4 phases as follows:

- Phase I** Preparation phase
- Phase II** Baseline survey and program development
- Phase III** Program implementation
- Phase IV** Program monitoring and evaluation

Phase I: Preparation phase

Objective:

To introduce the self-care promotion program to the community and to encourage patients with hypertension to participate the program

Activities:

1. The community leaders and health staff will be asked to be the supporting persons in the intervention. The researcher must be able to make the community leaders and health staff understand the objectives of the program.
2. The health staff, community leaders, and representatives of the patients with hypertension will be invited to the meeting for working agreement in the program.
3. The overall of the programs such as objectives, the target population, causes and consequences of the problem, benefit of the program will be identified during the meeting.
4. The working committee will consist of a researcher, research assistants, health staff, community leaders and representatives of patients with hypertension.
5. Community leader and the researchers will inform the community members of the program through public announcement while the health staff will encourage the patients with hypertension to participate in the program.

Duration:

Two month

Phase II: Baseline survey and program development*Objectives:*

- To find out the current perception and self-care practices, and to explore other factors affecting self-care behavior of patients with hypertension.
- To develop self-care promotion program based on the study group's suggestions

Activities:

1. Two research assistants will be trained in order to orientate and provide the overview of program. They will be trained how to be good interviewers. They will also be informed of the importance of data collecting process for data accuracy.
2. The instrument will be introduced to the research assistants. Two patients with hypertension from other sub-districts will be asked to test the understanding of being research assistants. Regarding the use of the instrument, if the assistants have any questions, the researcher will answer. The baseline data will be collected step by step as follows:
 - 2.1 The researcher will record name and address of the patients with hypertension from the registration for self-care program at the Pasak Health Center.
 - 2.2 The researcher and assistants will visit the patients at home and ask the permission for data collecting. They will introduce the objectives of the program. If the patients agree to join the program, they have to sign the agreement.
 - 2.3 The researcher and research assistants will record the data.
3. Two health staff will be asked about routine counseling or the previous hypertension program. This information will be studied by the researcher to create and modify the strategies of self-care promotion program.
4. The data will be analyzed to find out the result. The contents of self-care promotion program will be conducted based on the result of pretest and information from the health staff.

5. Working committee will be asked to review the contents and method of self-care promotion program.

Duration:

The baseline survey phase and program development will be conducted within four month.

Phase III: Program Implementation

Objectives:

- To provide the information about self-care practices for patients with hypertension in Pasak Sub-District
- To improve the perception and self-care practices for patients with hypertension in the Pasak Sub-District

Activities:

1. The first education activities will be held within 1 day in order to promote self-care promotion program and provide information for self-care practices by these activities:

Mode of intervention

- 1.1 *Visual aid presentation:* Education contents such as the high prevalence of hypertension in community, the risk factors, complications of untreated hypertension, an importance of the self-care behavior will be presented.
- 1.2 *Group discussion:* this activity aims to encourage patients with hypertension to exchange their experiences and their current self-care

practices. The participants will be divided into groups, each group will consist of 8 to 10. The facilitator will be the health staff or the physician from community hospital.

- 1.3 *Question and answer*: by the end of the education activities, the facilitator will lead to open discussion and focus on the importance of self-care practices.
2. The future activities will be informed. Each group needs to select one person to monitor and evaluate self-care promotion program including coordination with the researcher.
 3. The participants from the first education activity will be invited to participate in the second and third education activities.
 4. The second and third health educational activities will be held once every two months to motivate the participants on self-care practices. The participants need to share their idea and past experiences after the self-care practices. Group discussion, therefore, will be used to motivate self-care practices. The facilitators are the health staffs from the community hospital and health center. During the discussion of how to manage hypertension, self-care practices will be introduced to draw the participants' concern.
 5. The exercise program is expected to be practiced by the end of each education activity.
 6. The representative from each group will visit and monitor the self-care promotion program once a month.

Duration:

This phase will take around 6 months for 3 education activities.

Phase IV Program monitoring and evaluation:

Objectives:

- To advice and support self-care behavior in study group
- To ensure that the study group will apply an appropriate self-care behavior in their daily life

Program monitoring:

The working committee will monitor the health educational activities. The researcher and representatives from the patients with hypertension will monitor self-care practices through home visits.

Process and outcome evaluation

The process and outcome of evaluation will be used to evaluate the program. The researcher will evaluate the activities by observation. The number of participants, and resources will be used for these following indicators as:

Process Evaluation	Number of health educational activities Number of the participants Number of facilitators Number of group discussion Duration of health educational activities (in hours) Number of questions raised in each activity Satisfaction level of the participants Response rate of the participants
Perception Evaluation	Increase in severity perception

	<p>Increase in vulnerability perception</p> <p>Increase in self- efficacy</p> <p>Increase in response efficacy</p>
Behavior Evaluation	<p>Reduction in salty food consumption</p> <p>Reduction in fatty food consumption</p> <p>Reduction in sweet food consumption</p> <p>Reduction in number of cigarette smoking</p> <p>Reduction in beer or alcohol beverage consumption</p> <p>Taking medicine as ordered</p> <p>Keeping regular appointment</p> <p>Change on exercising hour, and duration</p> <p>Change on sleeping hour</p> <p>Participate more in merit rites, parties, clubs, or associations</p>

The effectiveness will be calculated to examine whether the program is achieving the objectives during planning or not. The result from pretest and posttest of both study group and control group will be calculated by this formula:

$$\text{Effectiveness} = (A2-A1)-(B2-B1) \pm \text{error}$$

A1: Pretest of the study group

A2: Posttest of the study group

B1: Pretest of the control group

B2: Posttest of the control group

3.10 DATA PROCESSING AND DATA ANALYSIS:

The researcher will check data collection from the interview questionnaire before computing for data analysis.

1. Descriptive analysis such as percentage, distribution, mean, median will be computed.

2. Analytical analysis: According to the sampling method in this study, the sample will not be drawn by normal distribution populations, and the observations are measured on ordinal scales. Thus, the non-parametric tests which are the Wilcoxon signed-rank and Mann-whitney rank-sum tests will be used in this study.

2.1 The Wilcoxon signed-rank test will be used to compare the mean of perception and self-care practices within the same group, study group or control group, before and after the intervention.

2.2 The Mann-whitney rank-sum test will be used to compare the mean of perception and self-care practices before and after intervention in different groups, the study and control groups.

3. Hypothesis test will be performed of 5% level of significance.

The members of control group will be asked about the perception of self-care practices and sources of information during the posttest. The researcher will be able to identify the contamination. The information will be considered in data analysis.

3.11 ETHICAL CONSIDERATION

The Ethical Committee of the College of Public Health, Chulalongkorn University, will approve the study before starting.

The program contents and activities will be provided to the participants. The participation must agree to participate in the program. In addition, informed consent will be obtained from the community leader, and all respondents. They will be asked for permission before interview or in-depth interview and to sign the written informed consent before being enrolled in the study. All information will be very confidential to protect human right.

3.12 TIME TABLE

Table 3.1 Time table

Activities	Year 2003												Year 2004					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1. Promotion self-care program																		
- Asking the permission from the community leader	X																	
- Public Announcing	X	X																
- Set up working committee		X																
2 Baseline survey & program development																		
- Training Research Assistants			X															
- Data collection for pretest			X															
- Data processing and analysis				X														
- Meeting with working committee			X	X	X													
- Construct self-care program					X	X												
- Prepareing material for workshop						X												
3. Program implementation																		
- 1st workshop							X											
- 2nd workshop									X									
- 3rd workshop											X							
- Program monitoring							X	X	X	X	X							
4. Program evaluation																		
- Workshop evaluation							X		X		X	X	X					
- Data collection for posttest														X				
- Data processing and analysis														X	X	X		
5. Report writing																	X	X

3.13 BUDGETING

The budget is designed for the activities as the following table:

Table 3.2 Estimation expenditure for program activities.

Budget Category	Unit	Cost per Unit	Number of unit	Total cost
Personnel				
Consultant	Person month	5,000	4	20,000
Researcher	Person month	4,000	18	72,000
Research Assistant	Person month	3,000	12	36,000
Working Committee	Person month	4,000	12	48,000
Workshop expense				
Facilitators	Person.day	1,000	15	15,000
Food& Refreshment	Day	150	210	31,500
Room Rental	Day	500	5	2,500
Material use for workshop	Per time	1,000	3	3,000
Tape cassette	Dozen	120	10	1,200
Stationary	Unit	200	20	4,000
Data collection & analysis expense				
Food & refreshment	Day	100	40	4,000
Photocopies	Set	10	300	3,000
Paper	Ream	120	15	1,800
Printing	Page	20	1,000	20,000
Data collection	Set	30	300	9,000
Data analysis	Set	10,000	4	40,000
Diskettes	Set	300	10	3,000
Miscellaneous & supplies				
Transportation	Per month	4,000	15	60,000
Computer Supplies	Per month	2,000	18	36,000
Communication	Per month	2,000	18	36,000
Production of reports	Report	400	20	8,000
Postage	Per month	1,000	12	12,000
Grand total				466,000



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