

SELF-CARE BEHAVIOR OF HYPERTENSION PATIENTS IN PAK TOK HEALTH PROMOTING HOSPITAL, MUEANG DISTRICT, PHITSANULOK PROVINCE

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Abstract

Self-care for hypertension is critical for controlling blood pressure and reducing hypertension consequences. However, little is known about hypertension self-care practices in the Pak-Tok sub-district. The objective of this study was to investigate self-care behaviors among hypertensive patients and the factors that influence self-care behaviors. This cross-sectional study was conducted on a sample of 240 patients who had been diagnosed with hypertension at the Health Promoting Hospital, Pak Tok sub-district, Mueang district, Phitsanulok province. Participants were selected by using a simple random sampling method. Self-care activities were measured using a questionnaire. The data were analyzed using Pearson's Product Moment Correlation and Chi-square method. The results of this study show that the average age of the respondents was 58 (range: 35 - 90), and 62.5% of the respondents had hypertension for 1 to 5 years. More than half of the participants reported enough and a good level of self-care behavior. The self-care behavior was statistically correlated with family hypertension history ($p < .05$) and knowledge level ($p < .01$). In conclusion, family hypertension history and knowledge were associated with the self-care behavior of hypertensive patients.

Keywords: Hypertension, Knowledge, Self-care, Behavior

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Received: 24 May 2022; Revised: 22 November 2022; Accepted: 23 November 2022

DOI: <https://doi.org/10.14456/lsej.2022.40>

The developed strategies for hypertensive patients improve with the knowledge and family social support. Still, further prospective studies are needed to understand the effects of family social support and self-efficacy on self-care behaviors. It is crucial to implement well-designed educational programs to improve hypertension self-care behaviors.

Introduction

Hypertension is a global public health problem and can occur in populations of all genders and ages. The amount of blood that the heart pumps and the difficulty of moving blood through the arteries are used to define hypertension. In general, the pressure is greater the more blood that is pumped and the narrower the artery. As stated in Table 1, hypertension is diagnosed when systolic blood pressure readings on two separate days are ≥ 140 mmHg and/or diastolic blood pressure readings on both days are ≥ 90 mmHg (World Health Organization, 2021).

Table 1 Blood Pressure Category

Blood pressure category	Blood pressure		
	Systolic		Diastolic
Normal	Less than 120	and	Less than 80
High Blood Pressure (no other heart risk factors)	140 or higher	or	90 or higher
High Blood Pressure (with other heart risk factors, according to some providers)	130 or higher	or	80 or higher
Dangerously high blood pressure - seek medical care right away	180 or higher	and	120 or higher

There are two main types of high blood pressure: (1) primary hypertension and (2) secondary hypertension. In primary hypertension, there is no identifiable cause of hypertension which tends to develop gradually over many years. Secondary hypertension is caused by an underlying condition such as (1) adrenal gland tumors, (2) congenital heart defects, (4) kidney disease, (5) Obstructive sleep apnea, (7) Thyroid problems, etc. It tends to appear more suddenly than primary hypertension and can damage a patient's health and vital organs such as the heart, brain, kidneys, and eyes.

In addition, medical expenses for patients with hypertension, treatment, and the cost of controlling symptoms are quite high (Sorato et al., 2022). The number of hypertensive patients worldwide is estimated to increase to 1.54 billion in 2025, up from 1 billion in 2008. of these cases, 29% are adolescents who mostly live in developing countries (Kearney, 2005; Motlagh et al., 2016). Three-quarters of people with hypertension in developing countries have low hypertension knowledge and poor control of the disease symptoms (Motlagh et al., 2016). In 2019, 60% to 70% of the world's elderly died from a stroke and ischemic heart disease caused by hypertension (World Health Organization, 2019). Moreover, hypertensive heart disease (HHD) was referred to as heart failure due to the direct and long-term effects of high blood pressure (Roth et al., 2020). Hypertension is a global public health problem and is a leading cause of death. Certain factors can increase the risk of hypertension:

1. Age - Hypertension tends to increase with age.
2. Race/Ethnicity - Hypertension is more common in African-American adults.
3. Weight - People who are overweight are more likely to develop hypertension.
4. Gender- Before age 55, men are more likely than women to develop hypertension. After age 55, women are more likely than men to develop hypertension.
5. Lifestyle – eating too much sodium (salt) or not enough potassium, lack of exercise, drinking too much alcohol, and smoking raises the risk for hypertension.
6. Family history - A family history of hypertension raises the risk of developing hypertension (Wright, et al., 2020).

To reduce the mortality of hypertensive patients, it is necessary to raise awareness of the dangers and risks of hypertension as a public health initiative. To evaluate the progression of the disease and prevent complications related to qualifying behaviors, as well as to enable correct treatment and reduce the severity of the disease and mortality in hypertensive patients, it is important and necessary to have knowledge of high blood pressure control (Kummak et al., 2016).

In Thailand, blood pressure is the number three major health risk factor, which causes 600,000 per year for a disability-adjusted life. (Aekplakorn et al., 2012; Meelab et al., 2012). Analysis in Thailand between 2003 to 2014 supported the age-related increase in hypertension patients with the risk of hypertension being slightly higher in

men (26%) than in women (24%). (Figure 1). In 2014, in Thailand, there were approximately 52,318 deaths from hypertension resulting in a total of 486,000 deaths (World Health Organization, 2019), and the elderly were diagnosed with high blood pressure at twice the rate of young people. (Sangsuwan & Jamulitrat, 2018).

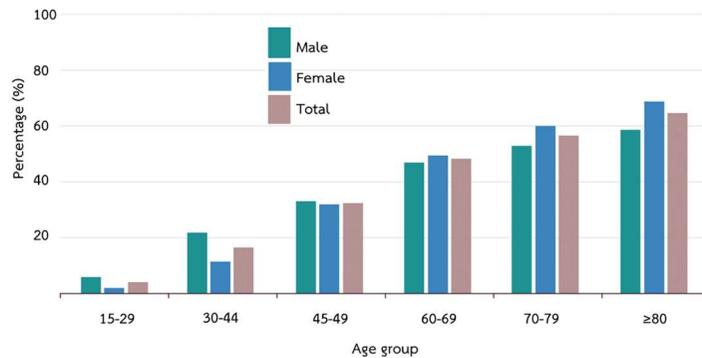


Figure 1 Prevalence of hypertension by age and gender in Thailand (World Health Organization, 2019)

The Pak-Tok sub-district, Phitsanulok province, has a population of 4,913 residents, of whom 560 are patients with high blood pressure. The blood pressure treatment programs in the Pak-Tok sub-district are divided into two methods: (1) non-drug treatment, which is a change in lifestyle behavior (reduce salty food, exercise regularly, quit smoking, control the amount of alcohol, and control weight), and (2) drug treatment. High blood pressure can be treated with medication, which can help reduce its complications. However, different types of medication affect individuals differently, necessitating that doctors customize the medication for each patient.

Importantly, hypertensive patients' health behaviors must be modified in order to control hypertension and its complications, which will improve their health and quality of life. (Pender, 1996). Such prevention measures include the promotion of self-care practices for hypertensive patients. Self-care behaviors have been reported as a major factor in controlling hypertension, but many hypertension patients are reluctant to make these changes. Examining self-care behaviors in hypertension patients and the factors that influence self-care behaviors may reveal important information for health professionals to control hypertension and for policymakers to support them. Self-care behaviors include medication adherence, regular physical activity, a healthy diet, and weight management.

In this study, the level of self-care and the factors that influence self-care behaviors among hypertensive patients in the Pak-Tok sub-district were investigated. A cross-sectional study using a questionnaire and statistical analysis was applied to analyze self-care behavior.

Materials and Methods

A cross-sectional study is an analysis method for looking at data at a single point in time (Orem, 2001). The participants in this type of study are selected based on variables of interest. For the current study, the variables of interest influencing self-care behavior included knowledge of self-care behavior, personal income, treatment duration, and level of self-care. A questionnaire was used to elicit information, and statistical analysis was applied to analyze the self-care behavior data returned.

Participants

The Pak-Tok health-promoting hospital reported that 560 hypertensive patients were being diagnosed by doctors. In the process of collecting data and selection conditions, the researchers informed the participants one week in advance. The inclusion criteria for the selection of volunteers were: (1) must be a hypertensive patient older than 35; (2) have had hypertension for at least 12 months; (3) were visiting the Pak-Tok health promoting hospital; and (4) voluntarily participated in the survey.

The researchers recruited a representative sample of hypertension patients using a random sampling technique. The sample size of the study population was calculated by the Yamane equation (Yamane, 1973) as shown in Eq. (1).

$$n = \frac{N}{1 + Ne^2} \quad (1)$$

where n is the sample size, N is the total population, and e is the error margin at a significant level of 0.05. The result of the sample size calculated by Eq. (1) was 240 people.

Measures

The researchers developed a questionnaire following the relevant literature to assess the level of hypertension knowledge. It contains twenty items, four questions about blood pressure classification, six questions about hypertension complications, four questions about blood pressure treatment and control, and four questions about hypertension symptoms and follow-up. The highest overall scores in the hypertension

knowledge questionnaire vary from 0 to 20. The participants were then categorized according to questionnaire scores as follows: inadequate knowledge level (<12 points), moderate knowledge level (between 12 and 16 points), and acceptable level of knowledge (>16 points). The six different dimensions of the self-care behavior questionnaire were evaluated using 17 items: five questions about compliance with health professionals; one question about drinking occasionally or not drinking; four questions about eating a healthy diet; four questions about regular exercise; two questions about quitting smoking or not smoking; and one question about weight management. The scale has four response options: never = 1, sometimes = 2, frequently = 3, and always = 4. A higher score means more effective self-care behavior. The sociodemographic features of the individuals, including their gender, age, and level of education were included in the information requested. Questions on hypertension included duration of hypertension, hypertension in the family, and subjective health state.

Finally, the content validity of the questionnaire was approved by three professionals, including two specialists in public health education and health promotion and one specialist in nursing. A pilot study involving 30 hypertension patients was done to confirm the study's validity. A score of 0.80 for Cronbach's alpha coefficient was determined for this investigation.

Statistical analysis

The data were analyzed with IBM SPSS Statistics 22.0 (trial version) (IBM, 2018). The descriptive statistics were used to present the demographic characteristics of the participants, including gender, age, education, duration of hypertension, family history of hypertension, advice for self-care behavior, and source of information. Pearson's Product Moment Correlation and Chi-square were utilized to determine the relationships between the variables.

Ethical consideration

Informed consent of each participant and ethical approval from the Human Research Ethics Committee of Pibulsongkram Rajabhat University was obtained for the study (COE No: B2020/0002) accordingly and the investigation was performed following the principles outlined in the Declaration of Helsinki.

Results

The study included 240 participants, 53.3% of whom were female, and 46.7% were male, with 38.3% of all participants aged between 46 and 55 years. The level of education was junior high school (41.7%). The duration of hypertension experienced was 1–5 years, representing 62.5% of participants, and 64.6% reported a family history of hypertension. The participants receiving advice on self-control diet behavior accounted for 41.7%, and 33.8% sourced their knowledge of hypertension from the radio (Table 2).

Table 2 The socio-demographic properties and hypertension-related questions in the study population. (n = 240)

Characteristics	Patients (n)	Frequency (%)
Gender		
Female	128	53.3
Male	112	46.7
Age groups		
≤ 35	9	3.8
36-45	25	10.4
46-55	92	38.3
56-65	21	8.8
66-75	16	6.7
> 75	77	32.1
Education level		
Primary school	62	25.8
Junior high school	100	41.7
Senior high school	30	12.5
Vocational certificate	40	16.7
Duration of hypertension		
< 1 year	73	30.4
1-5 years	150	62.5
6-10 years	10	4.2
10 years	7	2.9
Family history of hypertension		
Yes	155	64.6
No	85	35.4

Table 2 The socio-demographic properties and hypertension-related questions in the study population. (n = 240) (cont.)

Characteristics	Patients (n)	Frequency (%)
Advice for behavior		
Food diet	100	41.7
Exercise	24	10.0
Knowledge	67	27.9
Medication	49	20.4
Informed source of hypertension		
Television	26	10.8
Internet	67	27.9
Radio	81	33.8
Magazine	18	7.5
Etc.	48	20.0

We examined people's knowledge and comprehension of hypertension. 41.7% of participants had a poor understanding of hypertension, 52.5% had a moderate understanding, and 5.8% had an adequate understanding, as shown in Table 3.

Table 3 Hypertension patients classified by level of knowledge. (n = 240)

Knowledge level	Patients (n)	Frequency (%)
Poor (< 12)	100	41.7
Moderate (12-16)	126	52.5
Adequate (> 16)	14	5.8
$\bar{x} = 12.95$, S.D. = 2.15		

Table 4 categorizes the self-care behavior of hypertensive patients into multiple dimensions and values based on a variety of criteria. The most important variables of self-care behavior are weight management (34.2%), quitting smoking or not smoking (29.6%), regular exercise (29.6%), eating a healthy diet (28.8%), drinking occasionally or not drinking (27.5%), and compliance with health professionals (27.5%).

Table 4 Hypertension patients classified by level of self-care behavior (n = 240)

Dimensional behavior of self-care	Level of self-care behavior		
	Good n (%)	Enough n (%)	Less n (%)
Compliance with health professionals	66 (27.5)	134 (55.8)	40 (16.7)
Drinking occasionally or not drinking	66 (27.5)	89 (37.1)	85 (35.4)
Eat healthful diet	69 (28.8)	145 (60.4)	26 (10.8)
Exercise regularly	71 (29.6)	135 (56.3)	34 (14.2)
Quit smoking or no smoking	71 (29.6)	91 (37.9)	78 (32.5)
Weight management	82 (34.2)	59 (24.6)	99 (41.3)

As illustrated in Tables 5 and 6, gender, educational status, age, and duration of hypertension were not associated with self-care behaviors which were statistically correlated with a family history of hypertension ($p < .05$) and knowledge levels ($p < .01$).

Table 5 Self-care behavior levels distribution according to socio-demographic properties in the study population

Characteristics	Level of self-care behavior			p-value
	Good n (%) ^a	Enough n (%) ^a	Less n (%) ^a	
Gender				.828
Male	27 (50.0)	83 (49.5)	2 (40.0)	
Female	54 (50.0)	98 (54.1)	3 (60.0)	
Education level				.479
Primary school	11 (20.4)	49 (27.1)	2 (40.0)	
Junior high school	19 (35.2)	78 (43.1)	3 (60.0)	
Senior high school	11 (20.4)	19 (10.5)	0 (0.0)	
Vocational certificate	11 (20.4)	29 (16.0)	0 (0.0)	
High vocational certificate	2 (3.7)	6 (3.3)	0 (0.0)	
Family hypertension history				.008*
Yes	34 (63.0)	121 (60.0)	0 (0.0)	
No	20 (37.0)	60 (33.1)	5 (100.0)	

^a Percentages are the sum of columns.
* $p < .05$

Table 6 Pearson's correlations between age, duration of hypertension, knowledge scores, and self-care behavior

Characteristics	Level of self-care behavior			r
	Good n (%) ^a	Enough n (%) ^a	Less n (%) ^a	
Age				-.001
≤ 35	1 (1.9)	8 (4.4)	0 (0.0)	
36-45	6 (11.1)	19 (10.5)	0 (0.0)	
46-55	17 (31.5)	71 (39.2)	4 (80.0)	
56-65	7 (13.0)	14 (7.7)	0 (0.0)	
66-75	6 (5.6)	13 (7.2)	0 (0.0)	
> 75	20 (37.0)	56 (30.9)	1 (20.0)	
Duration of hypertension				.069
< 1 year	21 (38.9)	47 (26.0)	5 (100.0)	
1-5 years	26 (48.1)	124 (68.5)	0 (0.0)	
6-10 years	2 (3.7)	8 (4.4)	0 (0.0)	
>10 years	5 (9.3)	2 (1.1)	0 (0.0)	
Knowledge level				.205*
Poor	16 (29.6)	79 (43.6)	5 (100.0)	
Moderate	36 (66.7)	90 (49.7)	0 (0.0)	
Adequate	2 (3.7)	12 (6.6)	0 (0.0)	

^a Percentages are the sum of columns.

* $p < .01$

Discussions

In this study, the level of self-care and the factors that influence self-care among hypertensive patients were investigated. We found that a family history of hypertension and knowledge levels were statistically correlated with self-care behavior. The family history of hypertension was indicated by genetic factors and the patient's present illness of family, and the family history of hypertension was a risk factor for developing the severity of hypertension. Having at least one close family member with high blood pressure before the age of 60 indicates a high risk. It is important to understand that a family history of hypertension does not mean that there is high blood pressure, but it increases the possibility of the severity of the disease (Ranasinghe, 2015). The hypertensive

patients in the Pak-Tok sub-district understood and reduced a family history of risk factors through self-care practices. However, some people are not able to properly control their blood pressure due to an inadequate understanding of how hypertension affects difficulty controlling blood pressure and not following the doctor's recommended treatment. So, primary care providers and public health practitioners should pay more attention to patients recently diagnosed with hypertension. Self-care guidelines for hypertensive patients continue to be a challenge, as do effective interventions, as improved adherence to self-care behaviors is one effective method for controlling hypertension.

According to our findings, the level of knowledge about hypertension was found to promote positive levels of self-care behavior. Patients are more likely to be informed about specific actions in the illness management process if they have knowledge about the illness and engage in self-care behaviors such as diet, exercise, and blood sugar testing if they have more information about their illness. In other medical circumstances, such as diabetes, disease knowledge has been recognized as one of the primary predictors of adherence to self-care practice. In diabetes research, this link was seen as critical for diabetes intervention because both diabetes knowledge and self-care habits are linked to glycemic control, which is a measure of diabetes outcome (Kugbey et al., 2017). As a result, more patients should be provided with hypertension-related information, such as blood pressure measurements that are considered normal, higher, or lower, the patient's blood pressure measurements, behavioral advice. As this is a study of a single health-promoting hospital, it will not be easy to generalize the results. Because the self-management practices of the study participants were self-reported, there may be memory bias and social desirability bias.

Conclusions

The major risk cause of Noncommunicable Diseases (NCDs) is high blood pressure. Prevention and control are essential management factors for these patients. From the results of this study, we can conclude that uncontrolled blood pressure or high hypertension level is associated with both family history and self-care behavior, with proper self-care behavior being associated with the level of knowledge about hypertension. These findings also imply the importance of publicized healthcare information programs as a public health policy.

Acknowledgments

The author would like to thank Dr. Nirut Konkong for his helpful and constructive recommendations for this article. We also thank Mr. Roy I. Morien of the Naresuan University Graduate School for his assistance in ensuring correct English expression and grammar in this paper.

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