



FACTORS INFLUENCING HEALTH-PROMOTING BEHAVIORS OF OLDER PEOPLE WITH HYPERTENSION

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Abstract

The purpose of this study was to investigate health-promoting behaviors among older people with hypertension and to examine the predictive power of personal factors (including gender, education, family income, and family structure), perceived family support, and perceived self-efficacy to health-promoting behaviors. This study utilized a purposive sample of 100 older people from the Out Patient Department of Chaoprayayomraj Hospital, Suphanburi Province. Data were collected through an interview. The instruments used in this study were a demographic data form, the health-promoting behaviors questionnaire, the perceived social support from family scale, and the perceived self-efficacy questionnaire. The data were analyzed by using percentage, means, standard deviations, Pearson's correlation moment and multiple regression analysis. The results revealed that the mean of health-promoting behaviors of the older samples was at a good level ($\bar{X}=3.09, SD=0.36$). Education, family income, perceived family support, and perceived self-efficacy were positively related to health-promoting behaviors. Multiple regression analysis revealed that 38 percent of variance of health-promoting behaviors could be explained by personal variables, perceived family support, and perceived self-efficacy ($p<.001$). Perceived family support (Beta=.196; $t=2.217$; $p<.05$) and perceived self-efficacy (Beta=.527; $t=5.683$; $p<.01$) were the major predictors of health-promoting behaviors. The findings suggest that family members can be a major source of support for the older people to promote and empower them in maintaining health-promoting behaviors.

Keywords: health-promoting behavior, older, hypertension, family support, self- efficacy

Introduction

Hypertension is a high cause of death for approximately 8 million of the adult population worldwide and nearly 1.5 million people each year in the South East Asia Region (WHO, 2011). Hypertension is one of the important causes of premature death, estimated 1.56 billion adult will be living with hypertension in 2025. Hypertension is a chronic disease which requires long-term self-care, management and continual pharmacotherapy, which certainly affects the patients' quality of living and raises healthcare costs. Hypertensive patients have at least one complication wherein the older people have more chances to suffer from complications than younger adults. Significant complications of hypertension include coronary artery disease, cerebralvascular disease and chronic kidney disease. Patients who have more risk factors such as smoking, alcohol consumption and high fat diets are two times likelier to develop the complications of coronary artery disease than non-risk patients (Kannel and Wilson, 2003). In addition, hypertensive patients with high risk behaviors are at greater risk for paralysis, which may result in death or disability. Hypertension is a medical condition in which the arterial blood pressure is elevated to levels above 140 mmHg systolic blood pressure and above 90 mmHg diastolic blood pressure (Thai Hypertension Society, 2012). The etiology includes anomalous coronary, neuron-endocrine and metabolic functions. Treatment is not only aimed at lowering blood pressure, but also concerned with how to




reduce risk factors associated with developing complications. Non-pharmacologic treatment focuses on self management, lifestyle modification and promoting appropriate health-promoting behaviors. Lifestyle modification is the treatment recommended by physicians and includes diet control, body weight control, physical activity and stress management (Achananuparp,2008) with emphasis on limiting salt content in food, low fat and low calorie intake and avoidance of carbohydrates, sweets, alcohol and meat with increased fruit and vegetable consumption. Furthermore, exercise three times a week for 15-20 minutes will promote metabolism and reduce both subdural and intravenous fat while regular aerobic exercises will lower both systolic and diastolic blood pressures, and can reduce body weight as well. With regard to stress management, the older people with hypertension have to face with both physical and role function-related challenges in their lives. These challenges cause stresses which affect both health and well being, particularly affecting coronary artery function because the sympathetic system directly affects blood pressure levels. Efficient stress management, relaxation and expressing appropriate emotions will, therefore, decrease blood pressure (Gerber, 2002; Hollenberg, 2003).

Health behavior modification is the best management guideline for controlling blood pressure. Evidence from other studies has affirmed that blood pressure control helps prevent cardiovascular diseases and reduce complications, but most patients prefer pharmacotherapy to control their blood pressure. Moreover, many patients may not even realize that they have hypertension because the disease does not show obvious symptoms or cause the suffering of many other diseases. Thus, many patients remain ignorant in terms of self-management for promoting health. According to the Health Promotion Model (HPM) (Pender, 1996), the success of motivating individuals to maintain and enhance health-promoting behaviors depends on numerous factors such as personal biological, psychological and sociocultural factors. Personal Factors directly influence ways of thinking and attitudes about certain behaviors. Gender indicates physical differences which will affect both male and female roles within families and society as well as differing cognitive processes and attitudes. Education Level also affects occupations, income earnings and economic status. Wealthy older people patients can afford for more nutritious foods and maintain continuous treatment without having to worry about income.

Perceived self-efficacy is one of the variables in Behavior-Specific Cognition that affects the HPM and is considered the major motivation for performing health behaviors. According to Bandura(1997), perceived self-efficacy can motivate behavioral changes because it prompts initial decisions to activate desired behaviors. Social environments are known to affect health-promoting practices in older patients and include the family support. Family support means “a person’s perceived need for moral, emotional, and intimate support, as well as the need for information and feedback fulfilled by the family (Xiaolian, 2002). The older people with hypertension may need support from family members to enhance their motivation and provide information in self-care practice. Family members are a person’s lifelong environment that provides both physical and mental care as well as financial support to elderly. In Thai culture, the extended family is considered a primary support group. Although family household sizes have been larger in the past than the present, and the number of nuclear families is growing, many senior adults continue to live with their spouses and children. In light of the physical and role functioning limitations that accompany senior adulthood, the value of the family is highly significant toward health status wherein some studies have indicated that strong family and social support has a positive impact on self-management behaviors an self-care practices in diabetic, breast cancer, and COPD patients (Wen, Shepherd & Parchman, 2004)

In order to promote proper health-promoting behaviors in older hypertensive patients, both patients and their families must significantly participate and co-ordinate to achieve the treatment goal and maintain health to delay unsatisfactory complications and improve the



quality of living. This study determined the influence of perceived self-efficacy, family support, and personal factors on health-promoting behaviors among older people with hypertension, the findings of which could be of benefit to nurses in understanding the needs of older people and perceiving family environment in designing interventions to enhance cognitive variables and have an impact on health-promoting behaviors.

Purposes of the Study

1. To describe the health-promotion behaviors of older people with hypertension.
2. To examine the predictive relationship between health-promoting behaviors and its predictions (perceived self-efficacy, perceived social support from family, gender, education, family income, and family structure) among older people with hypertension.

Research Hypothesis

Gender, education, family income, family structure, perceived social support from family, and perceived self-efficacy can predict the health-promoting behaviors of older people with hypertension.

Methodology

A descriptive design was used in this study. The population of this study comprised older people with hypertension who were treated at Chaoprayayomraj hospital, Suphanburi. Purposive samplings were used in this study in compliance with the following inclusion criteria:

1. Either male or females aged of 60 years or older.
2. Ability to speak and understand the Thai language.
3. Physician's diagnosis with hypertension for at least 3 months.
4. Residence with family members.
5. No complications such as kidney disease, diabetes mellitus or coronary disease.
6. No problems with hearing, sight or cognitive impairment.

The sample sizes for the multiple regressions were determined by using power analysis, which is a method for reducing the risk of Type II errors (wrongly accepting false null hypotheses) and for estimating their occurrence (Polit & hungler, 1997). For the conventional criteria of a moderate effect size, power of .80 with six variables and a level of .05 were used; therefore, the minimum numbers of the samples in this study were 84. Hence, the final sample consisted of 100 older people.

Structured questionnaires were used for the interviews which consisted of four parts.

Part 1: Demographic Data Form

The demographic data form was used to collect data such as age, gender, marital status, educational background, occupation, number of family members, family income, family structure and illness duration.

Part 2: Health-Promoting Behavior questionnaire

Health-Promoting Behavior questionnaire developed by researcher within the framework of the HPM. This measure was used to determine the frequency of health-enhancing activities. There were 28 items in this questionnaire in which the respondents were asked to rate frequency of health-promoting behaviors in the domains of nutrition, physical activity, and stress management on a 4 point scale. The interpretations of the average scores are identified as follows: poor level (scores 1.00-1.50), fair level (scores 1.51-2.50), good level (scores 2.51-3.50) and Excellent level (scores 3.51-4.00)

Part 3: Modified Perceived Social Support From Family (MPSS-Fa) Scale

The Modified Perceived Social Support From Family Scale developed by Zhang (1999) was used in this study. The original questionnaire consists of 15 items measuring the extent to which an individual believes in needs for moral support, emotional support, intimacy and the need for information and feedback from family members. In order to cover all aspects of family in the Thai context, the researcher deleted one item and added 4 items about financial and material support received from family members. Interpretation of the average score is as follows: the older people with hypertension perceived the contribution of family support toward health-promoting behavior as low (1.00-2.50), moderate (2.51-3.00) and high (3.00-4.00).

Part 4: Perceived self-efficacy questionnaire

The Perceived Self-efficacy Questionnaire was modified from the Self-efficacy Questionnaire on the Diet and Physical Activities of essential hypertensive patients developed by Charoenkitkarn (2000).

This questionnaire contains 25 items measuring the individual's belief about his/her abilities to perform health-promoting behaviors.

Scoring was obtained by calculating a mean of the overall scale scores and their subscale score. The interpretations of the average scores are as follows:

1.00-2.00	Poorly perceived self-efficacy
2.01-3.00	Moderately perceived self-efficacy
3.01-4.00	Highly perceived self-efficacy

Validity and reliability

The instruments were initially tested for the content validity by five experts. These experts included one medical doctor who specialized in hypertension and four nursing instructors with experience in using Pender's Health Promotion Model. Suggestions from the five experts were incorporated into the final revision of the questionnaires.

The finalized questionnaires were tried out with 30 older people with hypertension. The instruments were evaluated for their reliabilities using Cronbach's Alpha coefficient analysis.

The results indicate the following:

Health-promoting behaviors Questionnaire	= 0.79
Modified Perceived Social Support From Family (MPSS-Fa) Scale	= 0.92
Perceived Self-efficacy Questionnaire	= 0.84

Protection of Human Subjects

The researcher protected the rights of the subjects by providing detailed information about the study and their rights to either accept or refuse to participate in the study. The subjects were allowed to withdraw or cancel their participation at any time and informed that their refusal or withdrawal from the study would not have any consequences that might affect either them or their families. The subjects were also assured that all data obtained would be kept confidential and no identification of each individual subject would be presented as both samples and obtained data would be shown as an overall picture only. Once the subjects had expressed willingness to participate in the study, they were asked to sign the consent form. This study received documentary proof of ethical clearance from the committee on Human Rights Related to Human Experimentation, Mahidol University.

Data Analysis

Demographic data were analyzed by frequency and percentage. The means and standard deviations of education, income, family structure, perceived self-efficacy, perceived social support from family, and health-promoting behavior were calculated, after which Pearson's correlation was performed to determine the relationship of predictive variables and health-

promoting behaviors. Multiple regressions using a simultaneous technique were used to determine the predictive power of gender, education, family income, family structure, perceived self-efficacy and perceived social support from family on health-promoting behaviors.

Results

Part I: Characteristics of the samples

The samples consisted of more females (51%) than males (48%) and the average age of the participants was 68 years old ($SD=6.94$), with a range of 60 to 88 years old wherein the majority of the participants ranged in the age from 60 to 65 years old (37%). Most of older subjects were married (68%), had primary school educations (78%), and reported no occupation (62%).

Thirty-six percent had monthly incomes of 3,000-6,000 baht with a mean income of 9,977 baht ($SD=12,836.52$). Forty-one percent of the older participants lived with their spouses and children and 41% lived only with their children. Thirty-one percent of the participants reported 2 members in their family and 23% of them had 4 members with a mean of 4.05 ($SD=2.01$). The range of hypertension duration was 1-25 years with a mean of 6.46 years ($SD=4.65$) wherein most of the participants (54%) had symptoms for 1-3 years.

Part II Description of main variables

Table 1 Means, standard deviations, and ranges for health-promoting behaviors, perceived social support from family and perceived self-efficiency (N=100)

Variable	\bar{X}	SD	Possible Range	Actual Range	Interpretation of score
Health-Promoting Behaviors					
Overall	3.09	0.36	1.00-4.00	2.21-3.86	Good
- Nutrition	3.30	0.36	1.00-4.00	2.08-3.92	Good
- Physical Activity	2.73	0.73	1.00-4.00	1.00-4.00	Good
- Stress management	3.21	0.44	1.00-4.00	2.00-4.00	Good
Perceived social support from family	3.40	0.48	1.00-4.00	1.32-4.00	High
Perceive self-efficiency					
Overall	3.42	0.37	1.00-4.00	2.56-4.00	High
- Nutrition	3.54	0.37	1.00-4.00	2.38-4.00	High
- Physical Activity	3.26	0.61	1.00-4.00	1.30-4.00	High
- Stress management	3.51	0.48	1.00-4.00	2.29-4.00	High

Table 1 showed that the mean score of the total health-promoting behaviors of older people with hypertension was at a good level ($\bar{X}=3.09$, $SD=0.36$) wherein eighty-two percent of the participants had health-promoting behaviors at a good level, thirteen percent were at a very good level and five percent were at a fair level. The highest mean score was in the nutrition dimension ($\bar{X}=3.3$, $SD=0.56$) while the overall mean score of perceived social support from family was at a high level ($\bar{X}=3.4$, $SD=0.48$).

The total mean score of perceived self-efficacy was also at a high level ($\bar{X}=3.42$, $SD=0.37$) and the highest mean was in the subscale of nutrition ($\bar{X}=3.54$, $SD=0.369$).

Part III The relationship contributions of gender, education, family income, family structure, perceived social support from family, and perceived self-efficacy toward health-promoting behaviors in older people with hypertension.

Table 2 The correlation coefficient among independent variables and dependent variables (n=100).

Variable	1	2	3	4	5	6	7
1.Gender							
2.Education	-.307						
3.Family income	-.254	.324					
4.Family structure	-.156	-.117	-.031				
5. Perceived social support from family	.108	.169	.229	.144			
6.Perceived self-efficacy	-.317	.284	.367	.144	.297		
7.Health-promoting behavior	-.109	.299**	.222*	.100	.381**	.592**	

*p<.05 **p <.01


Pearson's product-moment correlation coefficient analysis was performed to determine the actual correlations between independent and dependent variables. The results of the analysis are presented in Table 2, which shows that education, family income, perceived social support from family and perceived self-efficacy had positive relationships with health-promoting behaviors. The strongest positive relationship with health-promoting behaviors was perceived self-efficacy ($r = .59$, $p < .01$), followed by perceived social support from family, education and family income ($r = .38$, $p < .01$; $r = .30$, $p < .01$; $r = .22$, $p < .05$).

Table 3 Multiple regression analysis of the variables studied on health-promoting behaviors.

Variable	b	SE	Beta	t
Gender	0.054	.065	.077	.836
Education	0.071	.040	.158	1.766
Family income	-0.013	.000	-.047	-.524
Family structure	0.004	.015	.025	.299
Perceived social support from family	0.144	.065	.196	2.217*
Perceived self-efficacy	0.510	.090	.527	5.683**
Constant	0.611	.342		1.787
F = (6, 93)	11.117**			
Adjusted R ²	.380			

p< .05*, p< .01**

Table 3 shows that gender, education, family income, perceived social support from family and perceived self-efficacy explained 38 percent of the variance in the health-promoting behaviors with statistical significance at .01. Perceived self-efficacy was the strongest significant predictor (Beta=.527; t=5.68; p<.01), and perceived social support from family



was the second-most significant predictor (Beta=.196; t=2.217; p<.05). These results indicate that the older participants who had high levels of perceived self-efficacy and perceived social support from family reported higher levels of health-promoting behaviors.

Discussion and Conclusion

The findings are discussed in this study according to objectives and hypotheses of the study, as presented below.

1. Health-Promoting Behaviors in older people with hypertension


In this study, the older participants reported high performance on nutrition and stress management and low performance on physical activity. These activities are congruent with reports of better performance on nutrition and stress management in older people living in rural areas (Purananoon, Narapong, & Kreggultron, 2006). However, low engagement of older in exercise was reported in all studies. This indicates a need to develop an appropriate exercise program for older to enhance their physical activities.

The older samples in this study, so they tended to be more responsible for maintaining good health behaviors, especially more nutrition conscious. Illness may be an incentive to increase efforts toward a sense of well-being. They may have good attitude toward health and are aware of being responsible for one's own health which they acquired during their illness experiences with hypertension. The majority of the samples in the young-old age group (60-65 years old) with the mean age of 68. They reported quite high levels of healthy behaviors in comparing with other studies. For example, in a nutritional subscale, they rated high in the item "avoid drinking alcohol such as beer", and the item "avoid eating snack". In stress management subscale, they also reported high frequency in the item "problem solving without addictive stances such as cigarette smoking or drinking alcohol". Use other alternatives for problem solving such as doing meditation, watching television, listening to music or discussing with others were another positive lifestyle behavior for elderly to help them relax and manage their conditions with stress.

Regular physical activity has recognized as an important approach in keeping healthy aging. The older participants showed a good level of engaging in physical activity. They reported high frequency of lifestyle behavior in the item "spending their times doing much energy activities; such as house keeping, gardening or planting". The least frequency behavior was "cool down at least 5 minute for muscle relaxation after the physical activity". The Thai elder may not be accustomed to do formal exercise pattern. They perceive that physical activity is any activities in daily living that make them sweat or spend energy such as walking or working. They, therefore, may not know how to do muscle relaxation. For the elderly, it is needed to support the idea of walking because it appears to be an effective way to incorporate this type of exercise into their daily living.

2. The relative contribution of gender, education level, family income, family structure, perceived social support from family, and perceived self-efficacy to health-promoting behaviors in elderly people with hypertension.

The results showed that personal factors (gender, education, family income, family structure), perceived social support from family, and perceived self-efficacy explained 38 percent of the variance in the health-promoting behaviors. Perceived self-efficacy was the strongest predictor and perceived social support from family was the second strong predictor of health-promoting behaviors in elderly people with hypertension. Gender, education, family income, and family structure were not significant prediction of health-promoting behaviors. It can be explained in the following.



Gender did not relate with health-promoting behaviors. There were more female than male samples in this study. The result is consistent with Ngawsomsakul (2000) which found that gender had no relationship with exercise behaviors in cardiovascular disease patients.

Education had a positive relationship with health-promoting behaviors ($r=.299$, $p<.01$), indicating the importance of education in engaging in health-promoting behaviors. This variable has been supported by previous studies in which persons with more education had higher healthy lifestyles (Purananoon, Narapong, Kreggultron, 2006). However, it failed to predict health-promoting behaviors in this study.

Family income also had a positive relationship with health-promoting behaviors ($r=.222$, $p<.05$). Because of weak correlation, it failed to predict health-promoting behaviors. The finding is congruent with the study of Nies & Kershaw (2002) which found that income was correlated with health behaviors and physical activity. Thirty-six percent of the older samples in this study reported family income range between 3,000-6,000 Baht per month. Most of them received financial support from their children.

Living with others provides the older people with environmental resources that may facilitate in engaging in health-promoting behaviors. Most of the family members living with the elderly were spouses and children with the average of 4 members in the family. However, in this study, family structure was not correlated with health-promoting behaviors.

This study showed that the older reported high level of perceived social support from family and perceived self-efficacy. They were significant predictors of health-promoting behaviors indicating that those elderly who had stronger perceptions of family support and self-efficacy reported higher levels of health-promoting behaviors. In the culture context, family members or networks usually provide support to their older parents. Family is the opened system associated with various subsystems including spouse system, parents system, children, kinsfolk and relative system. Family function is important for the family lifestyle in order to support and prohibit some behaviors. Higher self-efficacy beliefs were significantly associated with higher performance of health-promoting behaviors. The finding is consistent with the study of Xiaolian (2002) and Wen, Shepherd, & Parchman (2004) also found that perceived family support and perceived self-efficacy were significant predictors of both diet and exercise self-care.

Implications and Recommendations

1. The nurses should design an effective strategy that can enhance positive thinking towards health promoting behaviors in easily accessible forms for the older, especially in terms of physical activity and exercise. In addition, nurses should be aware of the physical changes in the older people while physical exercises such as walking, yoga and tai chi should be advised according to individual needs.
2. Spouses and children were reported by the subjects as the most available supportive resources. This finding can remind nurses working with older to pay more attention to family members as participants in patient care as family members are taught appropriate ways to provide support to the older people and realize their importance in order to continually engage in health-promoting behaviors.
3. The findings of this study can be used as a database for further research on the family support, perceived self-efficacy and health-promoting behaviors of older people with hypertension. Furthermore, a nursing intervention for improving family support and self-efficacy should be explored.
4. This study should be conducted in community settings with different characteristics for target population or other chronic diseases including diabetes mellitus, cerebrovascular disease, heart disease and patients requiring long-term healthcare and self-management.



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