Journal of Science, Technology, and Humanities : 2012, Vol. 10, No. 1, pp. 65-71

FACTORS INFLUENCING HEALTH-PROMOTING BEHAVIORS OF VIETNAMESE PATIENTS WITH HYPERTENSION.

Nga Thi Ho [1,2*], Narumon Pathumarak[1], and Pornpat Hengudomsub[1]

[1]*Faculty of Nursing, Burapha University, Chon Buri 20131, Thailand.*
[2]*Faculty of Nursing and Medical Technology, Pham Ngoc Thach University of Medicine, Ho Chi Minh City, Vietnam.*

ABSTRACT

Despite the affirmed roles of health-promoting behaviors (HPBs) in improving health and quality of life among patients with hypertension, researchers were repeatedly reported patients' poor practices of such behaviors. This study was conducted to explore HPBs as well as to investigate the influences of patients' perceived health status, perceived social support, and perceived self-efficacy on HPBs. A sample of 107 patients who came to check up their health at the out-patient department of the Peoples' Hospital 115, Ho Chi Minh City were recruited by simple random sampling technique. Data collection took place during April to May 2012 by using the demographic questionnaire, general health scale (a subscale of SF36-health survey questionnaire), personal resource questionnaire, self-rated abilities for health practices scale, and health-promoting lifestyle profile II. Percentage, mean, standard deviation, and regression analysis were employed to analyze the data.

It was found that HPBs score was in the moderate level (mean = 2.4; SD$\pm$0.33). The highest score of HPBs was nutrition, followed by interpersonal relations, spiritual growth, health responsibility, stress management and physical activity, respectively. Multiple regression analysis indicated that perceived health status, perceived social support, and perceived self-efficacy significantly accounted for 34.8 percent of variance in HPBs (R^2= 34.8, $p < 0.001$). Perceived self-efficacy explained most variance in HPBs (β=0.31, $p < 0.01$), followed by perceived social support (β=0.27, $p < 0.01$), and perceived health status (β=0.23, $p < 0.01$). Results provided a vivid description of HPBs among Vietnamese patients with hypertension. Nursing intervention aimed at enhancing patients' social support, self-efficacy, and health status were recommended.

Keywords: Hypertension, health-promoting behaviours, Vietnamese.

*Corresponding author. E-mail address: ngautchcm@gmail.com

INTRODUCTION

Hypertension is a worldwide health challenge. It is estimated globally to cause 12.8% of all annual deaths (World Health Organization, 2011). Vietnam is not an exception; the prevalence of hypertensive patients has increased from 20.3% in 2006 to 25.1% in 2008 (Son, 2012; Vietnam National Heart Institute, 2008). In regard to Ho Chi Minh City, more than one-fifth (21.9%) of the populations are hypertension (Thuan, 2006). Hypertension that is not kept under control may lead to several hazardous complications (Vansan et al., 2001). In order to enhance health and prevent complications, health-promoting behaviors (HPBs) are suggested as one of the key roles. HPBs include physical activity, nutrition, health responsibility, stress management, spiritual growth, and interpersonal relationship (Pender et al., 2011). Regarding HPBs, it is proved that healthy eating and exercise can help reduce blood pressure from 3 to 9 mmHg (Appel et al.,1997; Chobanian et al., 2003). In addition, several studies indicated that efficient stress management, such as relaxation and expressing appropriate emotions can also decrease blood pressure (Gerber, 2002; Hollenberg, 2003).

Despite the importance of HPBs, it is shown that Vietnamese patients are unlikely to engage in health-promoting behaviors. A survey study conducted with hypertensive patients in Tra Vinh province found that only 34.8% of these patients were regularly followed eating regimens (Phuong et al., 2006). Another study on hypertensive patients in KonTum, South of Vietnam illustrated that only 47.8% of them followed a therapeutic regimen, 38.9% went to hospital for their health check as instructed, and 17.6% bought medicine without prescription (An, 2006). Regarding physical activity, only 40% of hypertensive patients were doing physical activity regularly (Phong and Hai, 2010), while a study of Minh and Nhat (2008) found that 28.4% of patients with hypertension were doing appropriate physical activity.

Studies have been identifying a variety of factors affecting HPBs. Perceived self-efficacy, perceived social support, and perceived health status were found to be reliable predictors, and they were supported by consistent research findings (Jaiyungyuen 2008; Kanittha et al., 2010; Warren-Findlow et al., 2011; Zugelij et al., 2010). However, studies pointed out that HPBs and its predictors were still limited, especially limited in patients with hypertension among Vietnamese populations. Study on HPBs of hypertensive patients has been mostly conducted in other countries. Obviously, Vietnamese have their own physical, psychological and social characteristics, which are different from those in other cultures. Those factors will impact patients' health-promoting behaviors theoretically (Pender et al., 2011), leading to the fact that Vietnamese patients may implement HPBs differently from patients in other countries. Thus, this study was taken place to describe HPBs and the influences of perceived self-efficacy, perceived social support, and perceived health status on HPBs of Vietnamese patients with hypertension.

MATERIALS AND METHODS

Participants of this study were 107 primary hypertensive individuals who came for health follow up at the Out Patient Unit of Cardiology Department, the People's Hospital 115, Ho Chi Minh City, Vietnam. Patients who were diagnosed by doctors as having hypertension for at least one month with no major problems of hearing, sight or cognitive impairment were invited to participate in this study.

Data was collected from April to May 2012. Participants were selected via single random technique and were interviewed by structured interview. Instruments consisted of five parts: (1) demographic questionnaire developed by the researcher to gather patients' personal demographic information such as age, duration of hypertension, blood pressure, etc. (2) Self-rated abilities for health practices scale (SRAHPS), which was originally developed by Becker et al. (1993), was used for measuring patients' perceived self-efficacy. Higher scores on this measure indicated higher levels of patients' perceived self-efficacy in doing HPBs. (3) Personal resource questionnaire (PRQ2000) described by Weinert (2003) was used to capture social support as measured by patients' perceived attachment/intimacy, social integration, nurturance,

reassurance of worth, and availability of assistance support, which were helped to facilitate their practice of HPBs. The higher score of PRQ reflected higher level of perceive social support. (4) General health scale (GHS), Vietnamese version, was a five-items instrument asking respondents to rate their health state based on their subjective perceptions. This instrument was a part of SF36-health survey questionnaire developed by Ware (2004). The high score of GHS indicated respondents' perceived good health. (5) Health-promoting lifestyle profile II (HPLPII) by Walker and Hill-Polerecky (1996) was used to assess patients' health-promoting behaviors. This measure evaluated patients' HPBs in six dimensions including nutrition, physical activity, health responsibility, stress management, spiritual, and interpersonal relations with higher scores indicating the better practice of health promoting behaviors. All questionnaires used in this study were translated by back translation technique into Vietnamese language, except for demographic questionnaire was prepared in Vietnamese. The reliabilities for all instruments presented acceptable levels of Cronbach's alpha, ranging from 0.82 to 0.92.

Standard multiple linear regressions were used to examine the predictive association between perceived health status, social support, self-efficacy, and health-promoting behaviors. The level of significance was set at $p<0.05$.

RESULTS

The characteristics of demographic data revealed that most of the patients were female, which accounting for 56.1% of the sample. The majority of patients were 61 years old that accounting for 52.3% of the sample ($\overline{X}$ = 61.36, SD±11.60). The educational level of the sample was quite low, where 54.2% finished only primary school, and only 2.8% completed university level. Most of them were married that accounted for 81.3% of the sample.

It was found that among 107 respondents, the majority of them had been diagnosed with hypertension from one to five years, where the longest period of time was of 17 years. Patients seemed to control their blood pressure (BP) with the mean of 125/75 mmHg, which most respondents (82.2%) reported no co-morbidity. There was 38.3% of the sample had been provided information related to health-promoting behaviors. Results are summarized in Table 1.

Table 1. Medical information of the sample with N = 107.

Characteristics	n	%
Duration of hypertension (years)		
1 - 5	75	70.1
6 - 10	25	23.4
> 10	7	6.5
Mean = 4.79 years; SD = 3.4 years; Range = 1-17 years		
Current Systolic blood pressure (mmHg)		
< 140 mmHg	80	74.8
≥ 140 mmHg	27	25.2
Mean = 124.9; SD = 17.3; Range = 100-180		
Current Diastolic blood pressure (mmHg)		
< 90 mmHg	94	87.9
≥ 90 mmHg	13	12.1
Mean = 75.3; SD= 9.9; Range = 60-100		
Co-morbidity		
No	88	82.2
Yes	19	17.8
Diabetes	8	42.1
Heart failure	7	36.8
Hyperlipidemia	4	21.1

Characteristics	n	%
Recommendations toward healthy lifestyle		
No	66	61.7
Yes	41	38.3
From whom (n = 41)		
Doctor	25	61.0
Health educator	11	26.8
Nurse	5	12.2

It was found that the mean score of perceived self-efficacy of the sample was low, with the values of $\overline{X}$=82.04 and SD±16.73, whereas the perceived social support was quite high at the value of 77.39, with SD±11.08. Respondents perceived their general health status at the poor level, with the values of $\overline{X}$=49.44 and SD±19.46. The practice of health-promoting behaviors among the sample was only at the moderate level, with the mean score of 2.4 with SD±0.33. Patients best practice in diet was reflected by the highest nutrition score among health-promoting behaviors, with the values of $\overline{X}$=2.7 and SD±0.51, as opposed to the lowest score, with the physical activity scale of $\overline{X}$=1.71 and SD± 0.61, as shown in Table 2.

Table 2. The description of the studied variables with N = 107.

Variables	Mean	SD.	Range	Possible score
Perceived self-efficacy	82.04	16.73	31-119	28-140
Perceived social support	77.39	11.08	54-100	15-105
Perceived health status	49.44	19.46	5-95	0-100
Health promoting behavior	2.40	0.33	1.63 - 3.15	1- 4
Nutrition	2.70	0.51	1.44 -3.89	1- 4
Interpersonal relations	2.68	0.46	1.56 -3.78	1- 4
Spiritual growth	2.56	0.54	1.44 -3.67	1- 4
Health responsibility	2.38	0.48	1.11 -3.56	1- 4
Stress management	2.34	0.45	1.38 -3.38	1- 4
Physical activity	1.71	0.61	1.00 -3.50	1- 4

Multiple regression tests showed that patients' perceived self-efficacy, perceived social support, and general health status significantly affected health-promoting behaviors, which predicted that 34.8% of health-promoting behaviors were variables at $p < 0.001$. The perceived self-efficacy and perceived social support were positively impacted on health-promoting behaviors, with the values of β coefficients as 0.31 and 0.27 at $p < 0.01$, respectively. The perceived health status was positively influenced health-promoting behaviors similarly, with the value of β=0.23 at $p < 0.05$, as shown in Table 3.

Table 3. Summary of regression analysis for variables predicting health-promoting behaviors with N = 107.

Variables	b	SE	β	t	p-value
Perceived self-efficacy	0.006	0.002	0.308**	3.238	0.002
Perceived social support	0.008	0.002	0.267**	3.175	0.002
Perceived health status	0.004	0.002	0.234*	2.354	0.020

Constant = 1.106
R^2 = 0.348***
F = 18.304 (3, 103)
* p <0.05, ** p <0.01, ***p < 0.001

DISCUSSION

Results of this study demonstrate that the respondents report a moderate level of heath-promoting behaviors. The results were in contrast to those of Huyen (2009), who found that HPBs of Vietnamese patients with diabetes were better than this current study, where values of $\overline{X}$= 2.84 and SD±.43. This was in line with the results highlighted by other studies. Kang et al.(2010) conducted studies in Korea and demonstrated the mean score of health promoting behaviors among coronary disease population as 2.68 with SD±0.09. Coulson et al. (2004) reported a similar finding in the sample of 281 patients with cardiovascular disease. The researchers identified the mean score of health-promoting behaviors of the sample as 2.7, with SD±0.04 by using the same instruments. The differences between total HPBs scores between this study and others are probably resulted from receiving healthy lifestyle recommendation. It was found that only 38.3% of patients in this study had ever been provided information related to engaging in healthy lifestyle. The majority of this sample may not have an adequate knowledge or concern toward health, and health care workers may not appropriately support them. Therefore, their practice of health promoting behaviors is still problematic. The aforementioned opinion is also agreed with results studied by Minh and Nhat (2008). They explored 384 hypertensive Vietnamese patients and reported that 67% of smoking patients kept smoking after being diagnosed with hypertension, while 55.6% of male patients kept drinking, nearly 40% of patients had high sodium consumption, and only 12% of the obese patients were able to reduce their body weights. This suggested that the respondents were poorly respected for the recommended instructions for health-promoting behavior.

Among sub-dimensions of health-promoting behaviors, the lowest score was found in the physical activity where values of $\overline{X}$=1.71 and SD±0.61. This result is expected since the sedentary lifestyle has been constituted a severe problem along with the development of Vietnamese society. Minh and Nhat (2008) found that only 37.2% of the hypertensive patients were practiced physical exercise. The best score of health-promoting behavior sub-domains was assigned to nutrition, with the values of $\overline{X}$=2.7 and SD±0.51. It is apparently shown that the high prevalence of women is 56.1%. These particular groups of women are those persons who taking the responsibility to purchase foods and cook in the family, and could be the factor that makes the score of healthy diet increased.

The regression model assessed that all the three variables of perceived social support, perceived health status, and perceived self-efficacy constituted the explanatory variables (34.8%) of health-promoting behaviors of patients with hypertension. This finding was supported by both theoretical and empirical basis. According to Health Promotion Model (Pender et al., 2011), these factors are theoretically served

as the motivational mechanisms for individuals' acquisition and maintenance of health promoting behaviors. They can affect patients' practice of such behaviors. According to empirical evidence, antecedent researches' findings were also in line with the results of the current study (Kanitha et al., 2010; Marsha et al., 2000; Zugelij et al., 2010).

In conclusion, the current research reinforces the findings from previous studies, which demonstrated limitation in practicing of health promoting behaviors among hypertensive populations. The research finding provided information to strengthen the roles of perceived self-efficacy, perceived social support, and perceived health status in determining hypertensive patients' health promoting behaviors. The results also highlighted a low score of physical activity sub-domain of health promoting behaviors. Thus, this study suggested nurses could develop appropriate intervention programs to enhance patients' healthy lifestyles. Interventions should be developed by means of changing the above variables, which could lead to the betterment in patients' practice of health promoting behaviors.

ACKNOWLEDGEMENT

We thank Graduate Studies Research Fund, Burapha University for its partially financial support for this study.

REFERENCES

An, D. D. 2006. Knowledge and related interventions of hypertensive patients.*Vietnamese Journal of Cardiology* 6(4): 85-101.

Appel, L. J., Moore, T. J., Obarzanek, E., Vollmer, W. M., Svetkey, L. P., Sacks, F. M., Bray, G. A., Vogt, T. M., Culter, J. A., Windhauser, M. M., Lin, P., Karanja, N., Simons-Morton, D., McCullough, M., Swain, J-Steele, P., Evans, M. A., Miller, E. R., and Harsha, D. W. 1997. A clinical trial of the effects of dietary patterns on blood pressure.*The New England Journal of Medicine* 336(16):1117-1124.

Becker, H., Stuifbergen, A., Oh, H., and Hall, S. 1993. Self- rated abilities for health practice: A health perceived self-efficacy measure. *Health Values* 17(5): 43-50.

Chobanian, A., Bakris, G. L., Black, H. R., Cushman, W. C., Green, L. A., Izzo, J. L. J., Jones, D.W., Materson, B.J., Oparil, S.,Wright, J.T. J., and Roccella, E. J. 2003. Seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure: The JNC 7 report. *Journal of the American Medical Association* 290(2): 197.

Coulson, I., Strang, V., Marino, R., andMinichiello, V. 2004. Knowledge and lifestyle behaviors of healthy older adults related to modifying the onset of vascular dementia. *Archeology in Gerontology and Geriatric*39(1):43-58.

Gerber, R. 2002. *Stress and Disease, Brain Luke. Managing Stress Principles and Strategies for Health and Wellbeing*. Jones and Bartltte, Boston, Mass.

Hollenberg, N. K. 2003. Stress and blood pressure. In Izzo, J. L. and Black, H. R. (Eds), Hypertension primer: *The Essential of High Blood Pressure*. Lippincott Williams and Wilkins, Philadelphia.

Huyen, N. T. H. 2009. *Health promoting behaviors of Vietnamese patients with diabetes*. Master degree thesis in Nursing, Faculty of Nursing, Burapha University, Chon Buri, Thailand.

Jaiyungyuen, U. 2008. *Factors influencing health-promoting behaviors of elderly people with hypertension*. Master degree thesis in Nursing, Graduate School, Mahidol University, Bangkok, Thailand.

Kang, Y., Yang, I.-S., and Kim, N. 2010. Correlates of Health Behaviors in Patients With Coronary Artery Disease. *Asian Nursing Research*, 4(1): 45-55. doi: 10.1016/s1976-1317(10)60005-9.

Kanittha, C., Sukanya, P., Sutham, N., and Chokchai, M. 2010. Factor influencing health promoting behaviors among the elderly under the Universal Coverage Program, Buriram Province, Thailand. *Asia Journal of Public Health* 1(1): 15-19.

Marsha, H. A., Andrea, G. B., Debra, S. H., and Linda, B. M. 2000. Perceived social support and health promotion lifestyles of rural women.

Online Journal of Rural Nursing and Health Care 1(1): 28-40.

Minh, T. C., and Nhat, P. D. 2008. Treatment obedient practice of hypertensive patients in An Thanh Village, Ben Luc district, Long An province in 2008. *Ho Chi Minh Medicine Journal* 12(4): 89-94 (in Vietnamese).

Pender, N. J., Murdaugh, C., and Parson, M. A. 2011.*Health Promotion in Nursing Practice*. 6th ed. Pearson Prentice Hall, New Jersey.

Phong, N. D., and Hai, H. V. 2010. Risk behavior factors of hypertensive patients treated at XuyenMoc Health station, BaRia, VungTau Province in 2009. *Ho Chi Minh Medicine Journal* 14(1): 168-174 (in Vietnamese).

Phuong, C. M., Nga, N. H., Trung, L. Q., Tien, T. N., and Minh, H. V. 2006. Characteristics of over 40 year old hypertensive patients in TraVinh Province, 2006. *Vietnam Journal of Cardiology* 61: 287-295 (in Vietnamese).

Son, P. T. 2012. Hypertension in Vietnam.From community-based studies to a national targeted programme. A Technical Report of a Research held by Epidemiology and Global Health Department of Public Health and Clinical Medicine, Umea University, Sweden and Vietnam National Heart Institute, Bach Mai Hospital and Hanoi Medical University, Vietnam.

Thuan, T. T. 2006. A survey on knowledge and practice for self-prevention in hypertensive patients in Thuanan district Binhduong in 2005. *Ho Chi Minh Medicine Journal* 10(1): 12-18 (in Vietnamese).

Vasan, R S., Larson, M G., Leip, E P., Evans, J C., O'Donnell, C J., Kannel, W B., and Levy, D. 2001. Impact of High-Normal Blood Pressure on the Risk of Cardiovascular Disease. *New England Journal of Medicine* 345(18): 1291-1297.

Vietnam National Heart Institute. 2008.A survey of prevalence of hypertension in 8 provinces, Vietnam. Vietnam National Heart Institute, Ha Noi, Vietnam (in Vietnamese).

Walker, S. N., and Hill-Polerecky, D. M. 1996. Psychometric Evaluation of theHealth-Promoting Lifestyle Profile II.Technical report, unpublished manuscript, University of Nebraska Medical Center, Nebraska.

Ware, J. E. 2004. SF36-Health Survey. QualityMetric Incorporated and Tufts University Medical School. *The Used of Psychological Testing for Treatment Planning and Outcomes Assessment*.(3rded), Lawrence Erbaun Associates, New Jersey.

Warren-Findlow, J., Seymour, R. B., and Brunner-Huber, L. R. 2011. The association between perceived self-efficacy and hypertension self-care activities among African American adults. *Journal of Community Health* 6: 287-294.

Weinert, C. 2003. Measuring perceived social support: PRQ2000. In Strickland, O. L. and Dilorio, C. (Eds). *Measurement of Nursing Outcomes* (pp.161-172). Springer Publishing Company, New York.

World Health Organization. 2011. *Global Atlas on cardiovascular disease prevention and control*. World Health Organization, Geneva, Switzerland.

Zugelij, U., Zupancic, M., Komidar, L., Kenda, R., Varda, N. M., and Gregoric, A. 2010. Self-reported adherence behavior in adolescent hypertensive patients: the role of illness representations and personality. *Journal of Pediatric Psychology* 35(9): 1049-1060.