



ปัจจัยที่มีผลต่อพฤติกรรมที่เกี่ยวข้องกับสุขภาพในผู้ป่วยที่มีภาวะความดันโลหิตสูงในประเทศเวียดนาม

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บทคัดย่อ

การวิจัยเชิงสัมพันธ์พรรณนาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาระดับของพฤติกรรมที่เกี่ยวข้องกับสุขภาพ และตรวจสอบความสัมพันธ์ระหว่างปัจจัยเชื่อมโยงต่อพฤติกรรมที่เกี่ยวข้องกับสุขภาพ ซึ่งครอบคลุมปัจจัยภายในบุคคล ปัจจัยภายนอกบุคคลและปัจจัยสิ่งแวดล้อม ในผู้ใหญ่ที่มีภาวะความดันโลหิตสูง กรอบแนวคิดของการวิจัยใช้โมเดลการส่งเสริมสุขภาพของเพนเดอร์ และ PRECEDE-PROCEED ของกรีนและครูเตอร์ กลุ่มตัวอย่างได้แก่ผู้ใหญ่ที่มีภาวะความดันโลหิตสูงจำนวน 150 คน ซึ่งมีอายุระหว่าง 36 - 65 ปี ที่ได้รับการรักษาในหอผู้ป่วยและคลินิกโรคหัวใจและหลอดเลือดของโรงพยาบาลกันฮัว สาธารณรัฐประชาธิปไตยเวียดนาม การเก็บข้อมูลกระทำโดยการใช้เครื่องมือที่ปรับปรุงจากทั้งสองโมเดล โดยมีการทดสอบค่าความเที่ยงตรงเชิงเนื้อหา และความเชื่อถือได้ ใช้สถิติพรรณนา และการวิเคราะห์ความสัมพันธ์ของเพียร์สันในการวิเคราะห์ข้อมูล

ผลการศึกษาพบว่า พฤติกรรมที่เกี่ยวข้องกับสุขภาพของกลุ่มตัวอย่างอยู่ในเกณฑ์ปานกลาง ($\bar{X} = 2.9, SD = 0.3$ $\bar{X} = 2.9, SD = 0.3$) เมื่อเทียบกับทุกมิติของพฤติกรรม พฤติกรรมการออกกำลังกายมีค่าเฉลี่ยต่ำสุด ($\bar{X} = 2.2, SD = 0.5$ $\bar{X} = 2.2, SD = 0.5$) ขณะที่พฤติกรรมด้านการหลีกเลี่ยงการสูบบุหรี่มีค่าเฉลี่ยสูงสุด ($\bar{X} = 3.6, SD = 0.7$ $\bar{X} = 3.6, SD = 0.7$) การวิเคราะห์ความสัมพันธ์ระหว่างตัวแปร พบว่า พฤติกรรมที่เกี่ยวข้องกับสุขภาพมีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับเพศ ($r=0.331, P<0.001$) ระดับการศึกษา ($r=0.263, P<0.01$) การรับรู้ประโยชน์ ($r=0.266, P<0.01$) และปัจจัยด้านสิ่งแวดล้อม ($r=0.336, P<0.01$) มีเพียงปัจจัยเดียวที่มีความสัมพันธ์เชิงผกผันกับพฤติกรรมที่เกี่ยวข้องกับสุขภาพ คือ เขตที่อยู่อาศัย ($r=0.208, P<0.05$)

ข้อเสนอแนะจากการศึกษา คือ เพื่อสนับสนุนการส่งเสริมพฤติกรรมที่เกี่ยวข้องกับสุขภาพในกลุ่มประชากรทั่วไป โรงพยาบาลควรช่วยให้บุคคลเกิดความเข้าใจความสัมพันธ์ระหว่างภาวะเจ็บป่วยกับพฤติกรรมและปัจจัยต่าง ๆ ที่เกี่ยวข้อง ก่อนที่จะมีการดำเนินการพยาบาล ซึ่งผลการศึกษาสามารถนำไปเป็นข้อมูลพื้นฐานในการวางแผนการปฏิบัติการพยาบาลโดยใช้แนวคิดการปรับพฤติกรรมเพื่อพัฒนาให้เกิดพฤติกรรมที่เกี่ยวข้องกับสุขภาพอย่างเหมาะสมในผู้ใหญ่ที่มีภาวะความดันโลหิตสูง

คำสำคัญ: ความดันโลหิตสูง ความสัมพันธ์พฤติกรรมสุขภาพ ประชากรเวียดนาม

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Background

Hypertension is a common chronic disease and a serious health care problem in both developed and developing countries. In Vietnam, the number of people with hypertension is dramatically increasing. Which leaves a significant socio-economic burden due to high prevalence of hypertension among adult population aged 25 years and older. The overall prevalence of hypertension in Vietnamese adults was 25.1%, approximately 11 million persons¹. It is estimated that the number of hypertensive people in Vietnam will reach to 10 millions by 2025². Besides, the number of deaths caused by hypertension is high, ranked 13 in the top 50 causes of death³. The mortality, morbidity and complications affect physical, psychological, and social aspects for people with hypertension. Poor quality of life among people with hypertension, especially for adults has play an important role in contributing to social-economic development of the country.

In management of hypertension and to improve quality of life among adults with high blood pressure, modification of healthy behaviors plays a vital role. Well-modified health behaviors composed of weight control, increased physical activity, dietary modifications, reduction of alcohol intake, smoking cessation, and appropriate relaxation techniques. This helps patients with hypertension reducing their blood pressure⁴. Health-Related Behavior (HRBs), helps is the most important element individuals' health and well-being. It refers to any action related to disease prevention, health maintenance, health improvement, or recovery of health⁵. It is believed that adopting appropriate health-related behavior could exert positive health impact for individuals with hypertension. Conversely, it could cause negative health impact if they do not practice their health-related behaviors effectively. The inappropriate health behaviors

including tobacco use, sedentary activities, unhealthy diet and excessive alcohol consumption lead to hypertension⁶. Some changes in eating habits such as high salt dietary intake, high-cholesterol food, high alcohol consumption, smoking and decreased physical activity are high risk factors of hypertension⁷. However, Vietnamese people tend to consume salty foods^{1,8}. Alcohol consumption, smoking are also predominant habit of the Vietnamese people⁹. Pilot study by the researcher at Khanh Hoa General Hospital found that those people had inappropriate HRBs accompanied with differently relevant perception on their behavioral performance.

In, Khanh Hoa province, Vietnam there have been no specific researches on nursing perspective for studying the health behaviors and factors relevant to HRBs in adult people with hypertension. Pertaining such information will serve as a good foundation leading to further nursing intervention to promote health behaviors in those with hypertension toward optimal health. Most of previous studies in Vietnam have been carried out in Medicine and Public Health fields to provide a program for treatment and control of hypertension in community^{1,8-11}. It is Therefore, necessary to conduct this research to determine level of HRBs and to explore relationship among factors affecting HRBs in adult population with hypertension. This study will fills in the gap of nursing research associated with topic of health behaviors in Vietnam and provides a fundamental evidence which will directly lead to establish appropriate nursing intervention for this patient group.

Pender's Health Promotion Model was used to construct pub domain of HBRs Pender¹² stated that health-promoting behaviors was directed towards enhancing the level of well-being and self-actualization of a given individuals and group. Walker, et al¹³ developed the Health Promoting Lifestyle Profile II by relying on the meaning of Health Promotion of



Pender. It is consisted of six dimensions of behavior including 1) health responsibility, 2) physical activity 3) nutrition 4) interpersonal relation 5) spiritual growth and 6) stress management. According to the recommendation of the seventh report of Joint National Committee (the JNC 7) on lifestyle modification to prevent and manage hypertension, it is composed of aspects: 1) weight reduction, 2) adopting DASH diet plan, 3) dietary sodium intake reduction, 4) physical activity, 5) quitting smoking, 6) moderation of alcohol consumption¹⁴. A non-pharmaceutic recommendation by physicians for hypertensive patients at Khanh Hoa General Hospital includes 1) weight management, 2) appropriate nutrition, 3) regular physical activity, 4) avoiding alcohol consumption and smoking, 5) stress management. From all seated literatures the researcher constituted six dimensions of HRBs used in this study. It includes 1) nutrition, 2) smoking, 3) alcohol consumption, 4) physical activity, 5) stress management, 6) health responsibility. Weight management, which involved nutrition and physical activity management.

Research Framework

A conceptual framework of this study was modified from the revised Health Promotion Model of Pender¹² and the PRECEDE-PROCEED Model of Green and Kreuter¹⁴. There are three groups of factors, namely, 1) Personal factors which are the personal characteristics and behavior-specific cognition of the hypertensive people that have an impact to HRBs, include gender, age, educational level, duration of illness, perceived benefits to action, perceived barriers to action, perceived self-efficacy; 2) Extrapersonal factors which are behaviors, beliefs or attitude of other people that affect performance of behaviors of hypertensive people, consisted of influence of family, peer's group and health care providers (support, attention, and encourage-

ment); 3) Environmental factors which are sources that facilitate or impede HRBs aspects of hypertensive people, include living area, and facilitated living conditions.

HRBs are defined as performance of the adults with hypertension on nutrition, smoking, alcohol consumption, physical activities, stress management and health responsibility which regard to and maintain the level of well-being, self-actualization, and fulfillment of individuals. Investigating relationship among selected factors and HRBs in adults with hypertension.

Materials and Methods

Sample and setting

The setting of descriptive correlation study was Khanh Hoa General Hospital, Khanh Hoa province, Vietnam. The study was carried out after being approved by Research Ethics Review Committee of Khon Kaen University, Thailand and Scientific Council of Khanh Hoa General Hospital, Vietnam. Duration of data collection was 4 weeks from February to March of 2013.

A total 150 participants were conveniently recruited based on Thorndike 1978 esitesirn. Forty-four patients from Cardiovascular Ward and 105 patients from Outpatient clinic of Khanh Hoa General Hospital. All subjects had been diagnosed as having hypertension for at least 6 months by physician and were receiving treatment at Cardiovascular Department and Outpatient Clinic. They were able to communicate, usually, read, write or understand and respond the questionnaire as well as informed consent form in Vietnamese language, and willing to participate in the study. Excluding criteria were 1) visual problem, 2) history of mental illness or or cognitive impairment, 3) serious medical complications which may enable them not to read and write or understand and respond to the questions, 4) comorbidity such as diabetes mellitus or chronic obstructive pulmonary disease or chronic renal failure with end stage renal disease.



Procedure

All eligible participants were clearly explained with written information sheet regarding the study. After consent formed had been sign , all of them were asked to complete the questionnaire in separate room. the researcher stayed there with them to answer any questions or their doubts related to study. The respondents could withdraw at any time and their right was always ensured according to study's ethical consideration in which human beings' right was protected. One nurse volunteered to assist the researcher as filed editor for questionnaires checking. The process was repeated until the expected sample size was achieved.

Measurement

For the purpose of the current study, the tools included as follows: 1) A demographic data recording form was established to obtain personal data including gender, age, educational, duration of illness, living area, and family income. 2) Health-related behaviors' checklist was modified from the Health-Promoting Lifestyle Profile II (HPLP II)¹⁵ to measure HRBs. The HRBs' Checklist included 32 items classified into 6 aspects, i.e. nutrition, smoking, alcohol consumption, physical activity, stress management, and health responsibility This tool was tested for reliability with Cronbach's alpha coefficient of 0.83. 3) Tools used to measure perceived benefits, perceived barriers and perceived self-efficacy were developed according to Pender's Health Promotion Model¹⁴. The sequence of Cronbach's alpha coefficients of perceived benefits, perceived barriers, and perceived self-efficacy tools were 0.95, 0.93, and 0.88. 4) Tools used to measure extrapersonal factors and environmental factors were developed based on PRECEDE-PROCEED Model of Green and Kreuter¹⁴. For reliability testing, Cronbach's Alpha Coefficients of extrapersonal and environmental factors' tools were 0.83 and 0.81.

Tools were content validated by five experts with the Content Validity Index of 0.98. Face validity was evaluated by a convenient sample of 15 patients who met the selective criteria and a panel of members including a cardiologist and a cardiologic nurse.

Statistical analysis

All data was analyzed using descriptive statistics and Pearson's correlation analysis¹⁶. Frequency, percentage, mean, and standard deviation were used to describe the personal, extrapersonal, and environmental factors affecting HRBs, and the HRBs, whereas the Cronbach's alpha coefficient was used to assess internal consistency of the tools. Correlations between the selected factors and HRBs were determined using Pearson Product-Moment Coefficient (r).

Results

1. Demographic characteristics of the subjects: The demographic characteristics of sample for the present study. Among the 150 subjects, percentage of females was higher than males (57.3% vs 42.7%); 48.7% of the subjects aged between 45 -54 years; 37.3% of them graduated at diploma or college level. The majority (76%) lived inside municipal area and 32% had family income from 3.1-5 million Vietnam Dong per month. Among them, 66.7% had sufficient income for their daily living. Concerning with duration of illness, 34% had hypertension less than 1 year and 38% were between 1 and 5 years. Over 58 % The subjects were hospitalized for one time. The majority of them (65.7%) attended a provincial general hospital for treatment of hypertension. More than half (54%) admitted to spend from 1.1 to 5 Vietnam Dong per one hospitalization.

2. Health-Related Behaviors of adults with hypertension: As presented in Table 1, the overall HRBs of sample were at a moderate level ($\bar{X}$ =2.87, SD=0.25). Dimensions of nutrition, physical activity,



stress management, and health responsibility were also at moderate level. Smoking and alcohol consumption were found at very good level of HRBs which meant the subjects avoided smoking and drinking alcohol at much. The mean scores ranged from 2.17 to 3.61. Surprisingly, dimension of smoking had highest mean score ($\bar{X}=3.61$, $SD=0.71$) while physical activity was found with lowest mean score ($\bar{X}=2.17$, $SD=0.42$).

3. Association between selected factors and Health-Related Behaviors: Pearson's correlation analysis revealed that overall HRBs had statistically significant association with gender ($r = 0.331$, $p < .001$), educational level ($r = 0.263$, $p < .01$), perceived benefits ($r = 0.422$, $p < .001$), perceived self-efficacy ($r = 0.320$, $p < .001$), extrapersonal factors ($r = 0.266$, $p < .01$), living area ($r = -0.208$, $p < .05$) and environmental factors ($r = 0.336$, $p < .001$). Meanwhile the overall HRBs were not significantly related with age ($r = -0.097$, $p > .05$), duration of present illness ($r = 0.152$, $p > .05$), family income ($r = 0.157$, $p > .05$), and perceived barriers ($r = -0.142$, $p > .05$). All this data was shown in Table 2.

Discussion

Prominent findings of the study included 1) the subjects had moderate level of the overall HRBs. Physical activity and smoking was the lowest and the highest mean score in HRBs' dimension; 2) there were positively significant associations between the overall HRBs and some selected factors, that is, gender, educational level, perceived benefits, perceived self-efficacy, extrapersonal factors and environmental factors; whilst living area was negatively related to HRBs.

From the findings, Vietnamese adults with hypertension presented a moderate level of the overall HRBs ($\bar{X}=2.87$, $SD=0.25$). Specifically, nutrition,

physical activity, stress management, and health responsibility were found at moderate level. The majority of subjects in this study practiced nutritional behaviors, exercised, managed and coped with stressors, and was responsible to their own health condition in average range. This was congruent with finding of Enjazab and colleagues¹⁷ study on 483 Iranian middle-aged women. Enjazab¹⁷ indicated that those Iranian women engaged in health promoting behaviors in the average level ($\bar{X}=2.73$, $SD=0.36$). Comparing to previous studies in Vietnam, the present findings regarding nutrition and physical activity aspects were consistent. That is, Vietnamese people's tendency consumed salty foods, cooked with salt, and added salty sauce in cooked foods; they lacked engaging in physical activity so the prevalence of physical inactivity increased among hypertensive people aged 25 years and over^{1,8-11}.

Smoking and alcohol consuming behaviors were found at very good level, i.e., the subjects avoided excessive smoking and drinking alcohol. Noticeably, smoking was the highest mean score in health-related behaviors' dimensions. As reviewed, smoking cessation and alcohol avoidance had health benefits on cardiovascular system¹⁸. Despite the fact that smoking is not significant cause of high blood pressure, it is a major risk factor for a heart attack. Continuous smoking lead to tendency of raised blood pressure over time⁷. This present finding revealed an optimistic point for improving health among this group. When facing their own health problems, people become more aware of adjusting their behaviors. This finding was similar to other study¹⁹ in which 84% of subjects desired to quit smoking, and 54% readily participated in the formal smoking cessation program during their hospitalization. However, this finding was opposite to other previous studies in Vietnam^{9,11}. Hoang's study⁹ found that proportion of hypertensive subjects consuming alcohol and



smoking was increasing along with the progressive level of hypertension. Nguyen et al¹¹ indicated that the prevalence of current smoking and alcohol excess was high in hypertensive people. This discrepancy could be due to higher number of females than males in this present study versus the above previous studies. For Vietnamese cultural circumstance, smoking and alcohol excess was not popularly accepted among females. This assumption was consistent with study finding of Duong et al¹⁰ that drinking and smoking was more common among male subjects.

A significantly positive association was confirmed between gender and HRBs which supported Pender's Health Promotion theory. Pender et al.¹² states that personal biologic factor such as gender influences on engaging health-promoting behavior. This finding was consistent with other studies^{18,20}. However, this finding was contrary to studies' finding of Artinian et al²¹, Pirincci et al²² health behavior had no significant association with gender. The difference between the present finding and other previous researches might be due to sample characteristics such as percentage of males and females, sample size, etc. The small sample size and convenient sampling could not represent for the whole population. In this study, female was higher percentage than male while perception of male and female was different on health-related actions. Males usually felt stronger and had good physical capacity. It might explain the underlying reason why the overall HRBs had mean score only at moderate level. In particular physical activity had the lowest mean score. Therefore depending on each specific health behavior, role of gender is motivated to help individuals with chronic illness engaging in appropriate HRBs toward their healthy status.

Educational level was positively related to HRBs, which was congruent with studies of Pham¹ Pirincci²², Murakami et al²³. Well-educated individuals were more likely to engage in better health-related

behaviors. This finding also supported Pender's Health Promotion theory that personal socio-cultural factor represented by education status affected and predicted health behaviors¹². In contrast to Artinian's study²¹ which showed that education was no significantly associated with total self-care behavior among patients with heart failure. The present study revealed that different education level can exert impact on health behaviors and lead to achieve discrepancies in health status. Indeed, education assisted people to enhance health lifestyle and prosperity in order to improve their health²⁴.

Perceived benefits and perceived self-efficacy were in a positive significant correlation with health-related behaviors. The findings were in line with Pender¹² who stated that perceived benefits of action as a behavior-specific cognition and affect could predict health behavior and self-efficacy beliefs influenced efforts to perform behavior; they were more likely to overcome barriers and individual's emotional reaction to behavioral performance. The present findings were also partially similar to Lee's study²⁵, Heo's study²⁰ in which indicated that high self-efficacy was related to more physical activity; and were well concurred with studies of Laosupap²⁶, Kwong²⁷ in which perceived benefits was found in significant correlation with health behaviors' patterns. However, perceived barriers was no significantly associated with health-related behaviors.

Extrapersonal factors had significantly positive association with HRBs. The finding also supported Green and Kreuter's PRECEDE-PROCEED theory in which support of family, peer, and significant others was reinforcing factors to provide continuing reward for persistence or repetition of behavior¹⁴. In similar to the current finding, Cole and Chesla²⁸, Jones²⁹ showed that family members could significantly affect individuals' capacity in maintaining their daily self-care behaviors.



Environmental factors including health care service, health insurance, and food source were positively related to HRBs. This meant that high support of environmental factors helped hypertensive adults to practice more their health-related behaviors. Conversely, living area was negatively related to HRBs. This finding indicated that living area could affect the people's HRBs in a negative way. The hypertensive persons who lived inside the municipal area engaged in inappropriate HRBs practice whereas those living outside municipal area were more likely to engage in appropriate HRBs.

Recommendation

This study is beneficial for nurses in providing caring supports to enhance hypertensive people's HRBs and competency. The results of this study provide good evidence which can contribute to a national hypertension campaign and educational program to promote HRBs towards the optimal health in the present group and other groups such as elderly people, younger adults. Based on the current findings, interventional studies should expand to enhance HRBs in individuals with other chronic diseases such as diabetes mellitus, cardiovascular diseases etc. These future studies should also be in concordance with cultural context, religion, and socioeconomic aspect to interpret the HRBs in more detailed.

Limitations of the study

This study presented possible relationships of variables at a point time. Longitudinal study will be encouraged. There was also some imitation in geographical area relation of food intake as Khanh Hoa is located in the south central central coast of Vietnam.

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Table 1: Mean, standard deviation, and level of dimensional and overall health-related behaviors of hypertensive adults (N = 150).

Dimensions of Health-related behaviors	Mean	SD	Level of behaviors ¹
Nutritional behaviors	2.81	0.26	Moderate
Smoking	3.61	0.71	Very good
Alcohol consumption	3.57	0.43	Very good
Physical activity	2.17	0.42	Moderate
Stress management	2.57	0.44	Moderate
Health responsibility	2.97	0.46	Moderate
The overall health-related behaviors	2.87	0.25	Moderate

Remark: 1: "Very good" refers to very good level of health-related behaviors in adult with hypertension (the mean scores ranged 3.50 – 4.00); "Good" refers to good level of health-related behaviors (the mean scores ranged 3.00 – 3.49); "Moderate" refers to moderate level of health-related behaviors (the mean scores ranged 2.00 – 2.99); and "Poor" refers to poor level of health-related behaviors (the mean scores ranged 1.00 – 1.99).

Table 2: Relationships between personal factors, extrapersonal factors, environmental factors and overall health-related behaviors (N = 150)

Variables	Overall Health-Related Behaviors	
	Pearson correlation coefficients	P value
Personal factors		
Gender	.331 ¹	.000
Age	-.097	.237
Educational level	.263 ²	.001
Duration of illness	.152	.063
Perceived benefits	.422 ¹	.000
Perceived barriers	-.142	.083
Perceived self-efficacy	.320 ¹	.000
Extrapersonal factors	.266 ²	.001
Family income	.157	.055
Living area	-.208 ³	.011
Environmental factors	.336 ¹	.000

Remarks: 1: $p < 0.001$; 2: $p < 0.01$; 3: $p < 0.05$



Factors Affecting Health-Related Behaviors in Adults with Hypertension In Vietnam

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Abstract

This descriptive correlation study aimed to identify level of Health-Related Behaviors (HRBs) and to examine relationship between factors relevant to HRBs including personal, extrapersonal, and environmental factors and HRBs in adults with hypertension. Pender's Health Promotion and Green & Kreuter's PRECEDE-PROCEED Models were used as a frame of reference for this study. The convenience sample of 150 hypertensive people aged 35 to 65 years, who received treatment at both cardiovascular ward and outpatient clinic of Khanh Hoa General Hospital, Khanh Hoa, Vietnam were adopted. The data collection tools were constructed based on Health Promoting Lifestyle Profile II, Pender's Health Promotion and Green and Kreuter's PRECEDE-PROCEED Models. All tools were tested for content validity and reliability. Descriptive statistics and Pearson's Product-Moment Correlation Analysis were employed for data collection.

The results showed that the overall HRBs were found at moderate level ($\bar{X} = 2.87$, $SD = 0.25$). Among HRBs' dimensions, physical activity had the lowest mean score ($\bar{X} = 2.17$, $SD = 0.44$) whilst smoking had the highest one ($\bar{X} = 3.61$, $SD = 0.71$). Correlation analysis revealed that overall HRBs had significantly positive association with gender ($r = 0.331$, $p < .001$), educational level ($r = 0.263$, $p < .01$), perceived benefits ($r = 0.422$, $p < .001$), perceived self-efficacy ($r = 0.320$, $p < .001$), extrapersonal factors ($r = 0.266$, $p < .01$), and environmental factors ($r = 0.336$, $p < .001$). The only factor that was negatively associated with the overall HRBs was living area ($r = -0.208$, $p < .05$).

The findings suggested that to enhance appropriate health-related behaviors among hypertensive people, nurses need to assist them to understand connections between illness, behaviors, and influencing factors, This study provided fundamental evidence for designing appropriate nursing intervention regarding behavioral improvement among hypertensive people toward optimal health status and level of well-being.

Keywords: hypertension, health-related behaviors, vietnamese population.

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