ปัจจัยที่มีอิทธิพลต่อประสบการณ์อาการความดันโลหิตตก จากการเปลี่ยนอิริยาบถในผู้สูงอายุชาวไทยที่มีภาวะความดันโลหิตสูง

Factors Influencing Orthostatic Hypotension Experience among Thai Older Adults with Hypertension

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บทคัดย่อ

ประสบการณ์อาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถเป็นการรับรู้ของบุคคลเกี่ยวกับการมีอาการวิงเวียน ปวดศีรษะน้อยๆ หรือเป็นลม เมื่อเปลี่ยนท่าทาง โดยทั่วไปจากการนั่งหรือนอนเป็นการลุกขึ้นยืน วิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีอิทธิพลต่อประสบการณ์อาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถในผู้สูงอายุที่มีภาวะความดันโลหิตสูง กลุ่มตัวอย่างคือผู้สูงอายุที่มีภาวะความดันโลหิตสูงจำนวน 278 ราย อายุเฉลี่ย 70.5 ปีอาศัยอยู่ในเขตเมือง จังหวัดชลบุรี ในปี พ.ศ. 2559 เครื่องมือที่ใช้ในการวิจัยมีจำนวน 5 ชุดเป็นแบบสอบถามที่ให้กลุ่มตัวอย่างเป็นผู้ตอบเอง มีค่าความเชื่อมั่นอยู่ระหว่าง.70-.90. การวิเคราะห์ข้อมูลใช้สถิติพรรณนาและการวิเคราะห์เส้นทาง ผลการวิจัยพบว่าการรับรู้ภาวะสุขภาพมีอิทธิพลทางลบโดยตรงต่ออาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถ (β = -.23) การรับรู้ภาวะเจ็บป่วยและการเกาะติดยามีอิทธิพลทางบวกโดยตรงต่ออาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถ (β = .27 และ β = .21 ตามลำดับ)และการรับรู้ภาวะเจ็บป่วยมีอิทธิพลโดยอ้อมต่ออาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถโดยผ่านทางการเกาะติดยา เส้นทางที่มีนัยสำคัญทางสถิติทั้งหมดสามารถอธิบายความแปรปรวนได้ร้อยละ 23.4%ข้อค้นพบจากการวิจัยนี้แสดงให้เห็นว่า การรับรู้ภาวะสุขภาพ การรับรู้ภาวะเจ็บป่วย และการเกาะติดยา มีอิทธิพลต่อประสบการณ์อาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถในผู้สูงอายุที่มีภาวะความดันโลหิตสูงการจัดกิจกรรมหรือโครงการเพื่อลดประสบการณ์อาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถ โดยมุ่งเน้นให้มีการรับรู้ภาวะสุขภาพเพิ่มมากขึ้น รับรู้ภาวะเจ็บป่วยและการเกาะติดยาลดน้อยลง จะเป็นประโยชน์อย่างยิ่งโดยเฉพาะในกลุ่มผู้สูงอายุชาวไทยที่มีภาวะความดันโลหิตสูง

คำสำคัญ : ประสบการณ์อาการความดันโลหิตตกจากการเปลี่ยนอิริยาบถ การรับรู้ภาวะสุขภาพ การรับรู้ภาวะเจ็บป่วย การเกาะติดยา ผู้สูงอายุชาวไทยที่มีภาวะความดันโลหิตสูง

Abstract

Orthostatic hypotension (OH) experience isacause of dizziness, light headache or faintingwhen changing position, usually from a sitting or lying down to standing position. The purpose of this study was to determine factors influencing the impact of OH as experienced by older adults with hypertension. The sample included 278 older adults diagnosed withhypertension. The subjects resided in Muang, Chon Buri province in 2016 and hada mean age of 70.5 years. Five self-report research instruments were used to collect data. Their reliability ranged from .70to.90. Descriptive statistics and path analysis were used to analyze data. Results

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revealed that health perception had a negative direct effect on OH experience (β = -. 23). Illness perception and medication adherence had positive direct effects on OH experience (β = .27 and β = .21, respectively). Moreover, illness perception had a positive indirect effect on OH experience through medication adherence. The total significant paths accounted for 23.4% of theexplained variance. Findings show that health and illness perception and medication adherence contributed to OH experience among older adults with hypertension. An intervention or activityaimed to decrease OH experience by focusing on increasing health perception and decreasing illness perception and medication adherence would be beneficial especially in the group of Thai older adults with hypertension.

Keywords : Orthostatic hypotension experience, health perception, illness perception, medication adherence, Thai older adults with hypertension

Significance and Literature Review

Orthostatic hypotension (OH), a form of postural hypotension, is a sign of low blood pressure that happens when people stand up after sitting or lying down. It is manifested by a feeling of dizziness and can cause fainting, common in those who are 65 years old or older. In medical terminology, it is defined as a fall of systolic blood pressure of at least 20 mmHg or diastolic blood pressure of at least 10 mmHg within 3 minutes of standing or tilting the head-upto at least 60 degrees on a tilt table.[1] OH prevalence increases exponentially with age because ageing changes impair the compensatory mechanismswhich maintain adequate blood pressure with postural change.[2] These changes make older people more prone to OH. In addition, ageing is associated with an increased number of risk factors for OH, such as antihypertensive medication. OH occurrence is also associated with uncontrolled hypertension, and adherence to anti-hypertensive medications accounts for this issue.Older adults with hypertension represent the most rapidly growing segment of the population. Hypertension is the most common diseaseamong older Thai people with the highest prevalence rate at 41% population.[3, 4] The prevalence of OH has been reported as 14.8% among Thai hypertensive elderly.[5] In older adults with hypertension, it has long been a clinical concern that the medicine used for intensive anti-hypertensive therapy can cause OH, whichis associated with falls and fear of fallings. Clinicians must weigh the risks and the benefits of reducing blood pressure levels in patients who are at risk for both hypertension-related cardiovascular illness and fall-related injuries[2].

The OH experienced by hypertensive older patients should be considered and managed well because consequences of falls in frail peopleare strongly associated with morbidity and mortality.[3] This research project focuses on the perception of individuals about symptoms related to OH and the impact of those symptoms on everyday activities. The common symptoms included lightheadedness, dizziness, feeling faint, changing in vision as blurry or gray. Loss of consciousness or syncope may occur with severe hypotension. Other less specific symptoms,including generalized weakness, fatigue,shoulderand neck pain. Cognitive slowing, leg buckling and headache,have also been reported.[4]

Based on the theory of Symptom Management[6] and review related literatures, it issuggested that symptom experiences are influenced by various contextual variables, which comprise three domains of person, health and illness, and environment. Health and illness perceptionsare

the most relevant and affect the OH experience.[4] Attitude toward own ageing, a person domain, and anti-hypertensive medication adherence, a socio-environmental factor, were also associated with the OH experience and could mediate relationships between health, illness and the symptom experience.[2], 5-7 However, these empirical researches are mostly drawn from the western culture, and minimally found in Thai context.To decrease the effects of OH among Thai older adults with hypertension, it would be of interest to identify the influencing factors associated with OH which can, in turn, lead to the development of nursing interventions that prevent OH experiences.

Conceptual Framework of the Study

The Symptoms Management Theory[5, 6] and previous related literature suggested that precursors of a symptom experience include individual, demographic and the disease factors. Health perception and illness perception of individuals with OH also accounted for the disease experience perception.[7, 8] Attitude toward own ageing is the perception of older adults about their personal characteristics that are related to symptom experience of their disease[9]. In addition, adherence to anti-hypertensive medication was the most concerned factor affecting OH occurrence. Studies showed that OH was positively associated with number of antihypertensive medications taken.[10] Attitude toward own ageing and medication adherence could mediate relationships between the health and illness perceptionsand the OH experience. Thus, all of these concepts, representing health and illness perceptions, attitude toward own aging, and medication adherence are proposed to have complex links rather than individual or direct links to OH experience.

Objective

To determine factors, including health and illness perception, attitude towards own aging and medication adherence, influencing the experience of OH among Thai older adults with hypertension.

Study Hypotheses

This study tested the following hypotheses, which were drawn from the proposed causal model, to determine factorsinfluencing the experience of OH among Thai older adults with hypertension. 1) Health perception and Attitude toward own aging each have direct negative effects on OH experience, 2) Illness perception and Medication adherence each have direct positive effects on OH experience, and 3) Health perception and Illness perception influence OH experience through Attitude toward own aging and Medication adherence. See Figure 1.

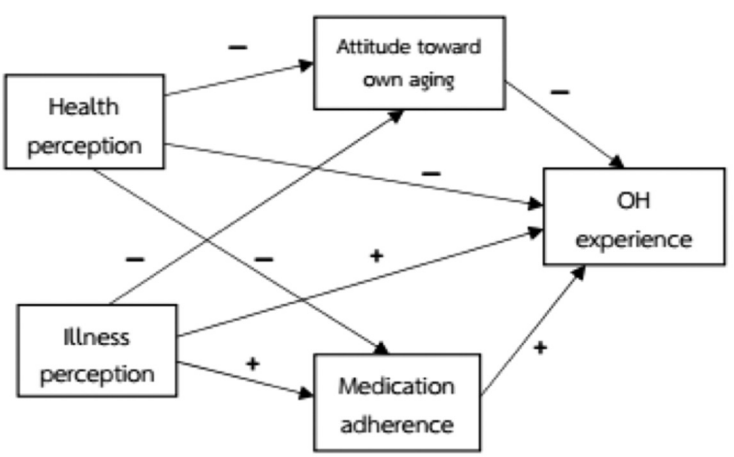

Figure 1 The proposed causal model of the study

Methods

Design: A correlational predictive, cross-sectional study was used.

Population and sample: A multi-stage random sampling was used to recruit a sample of 278 hypertensive older adults residing in communities in Chon Buri municipalityfrom March to April 2016. Six out of 18 sub-districts were randomly selected by drawing 6 numbers from a numerical list of sub-districts. Participants in each selected sub-district who met the inclusion criteria were invited to voluntarily participate in the study. The inclusion criteria included: 1) 60 years of age or over, 2) being diagnosed as hypertension and taking hypertensive medication, 3) no cognitive impairment (screening by Mini-Cognitive assessment instrument (Mini-Cog),[11] and 4) able to communicate in Thai language.

Research instruments:Five self-report questionnaires were used to assess the key studied variables.

1. OH experience was measured by using the Orthostatic Hypotension Questionnaire (OHQ). [3] It was divided into two parts: I) the OH Symptom Assessment (OHSA) containe[d6] questions. Each question was 11 points ranging from 0-10 rating the intensity of a symptom, and II) the Daily Activity's Scale (OHDAS) contained 4 questions. Each question was 10 points ranging from 1-10 for rating the impact of OH on daily activity. The composite OHQ score was calculated by summed OHSA's and OHDAS' scores. The possible lowest and highest scores are 4-100. The higher the score, the more OH experienced by the subject, the lower the score, the less experience. Theinternal consistency of composite OHQ was.91.

2. Health perception was measured by using the short form of a health surveyquestionnaire.[12] Itcontained 12 items to measure all eight health domains with 1-2 items per each. The domains were general health perception, physical functioning, role limitations due to physical health problems,role limitations due to emotional health problems, bodily pain, mental health, vitality and social functioning. Higher scores represent perception of better health status. Its Cronbach's alpha reliability was .70.

3. Illness perception was measured by using the Brief Illness Perceptions Questionnaire (B-IPQ).[13, 14] It comprised 9 questions to assess illness that the older adult perceivedregarding their hypertension. Eight questionsare ratedon a scale of 0-10. The higher the score, the more illness perceived. Its Cronbach's alpha reliability was.71.

4. Attitude towards own ageing was measured by using the Attitude Towards Own Ageing (ATOA) questionnaire.[15, 16] It comprised 5 items providing a multidimensional approach to assess the psychological state of older people. Respondents were asked to indicate whether they agree (score = 1) or disagree (score = 0) with these statements. The total score ranged from 0-5 (most negative ATOA) to 5 (most positive ATOA).Its Cronbach's alpha reliability was .70.

5. Medication adherence was measured by using the medication adherence questionnaire.[17] Ithas 19 items with 1-5 point-rating scale. It measured three factors of medication adherence using self-report to evaluate the medication-taking behavior of hypertensive patients and predicting therapeutic efficacy. Reliability testing using Cronbach's alpha was .70.

Ethical Considerations

This proposal was submitted to grant approval for ethical consideration for the Institutional Review Board, Faculty ofNursing, Burapha University. The researcher introduced and described the study aims and confidential information, benefit, the method, and the right of subjects. The participants were then explained the objectives of this study,

theprotection of confidentiality and their right to withdrawn from the study without penalty. There was no obligation of costto them. They were given theopportunity to discuss the purposes of the study andassured of the confidentiality of their answers. Every single step was done with thoughtful concern for thedignity, value, and consequence to the participants. All information will be destroyed completely after publication of the study findings.

Data collection procedures

After the IRB approval for the study had been obtained, data were collected withthe following procedures:

1. Prior to data collection, preparation of the village volunteer-research assistants was performed. The researcher explained objectives of the study and steps of data collection to the research assistants. After that the researcher explained and discussed all questionnaires to ensure the research assistants understood and could collect data correctly by themselves.

2. The researcher contacted the head of each selected sub-district to ask for a list name of their community-dwellers who met the inclusion criteria. Then the researcher randomly selected the possible participants and asked the head to introduce the participants. The researcher invited the participants toparticipate in the study by giving information about the study objectives and others, as well as protection for human subjects. After they understood and agreed, a signed informed consent was obtained.

3. The demographic characteristics' information was carried out by interviewing. Then, all other self-report questionnaires were administered by asking the subject to complete them. These took about 20-40 minutes.

4. In case of a participant who was unable to read either due to visual problem or reading ability, data were obtained by an assigned research assistantto read out loud and mark all answers for that participant.

Data analyses

Data were analyzedby using a statistical software program. Statistical significance level was set at $p< .05$. Descriptive statistics were used to describe the sample characteristics and the study variables. Path analysis was used to determine influencing factors, including health perception, illness perception, attitude towards own ageing and medication adherence on OH experience.

Results

The total sample was 278 older adults with hypertension. Their mean age was 70.5 years (SD = 6.7, range from 60 to 90). Most of them were females (67%) and had completed elementary school (80%). Almost all of them lived with their family (94%), and only 6% lived alone.

OH experience had a mean score of 2.31 (SD = 1.68). Health perception had mean score of 85.39 (SD = 5.47), and Illness perception had mean score of 3.65 (SD = 1.61). Mean score of attitude towards own ageing and medication adherence were 2.08 (SD = 0.87) and 3.77 (SD = 0.46), respectively. Details are shown in Table 1.

The Analysis of Moment Structure (AMOS) program was used to analyze fit indices of the path model. Health perception had a negative direct effect on OH experience (β = -.23). Illness perception had positive direct effects on OH experience (β = .27), and medical adherence (β = .28). Medical adherence had a positivedirect effect on OH experience (β = .21). Medication adherence had a positive direct effect on OH experience (β = .21). In addition, Illness perception had a positive indirect effect on OH experience through

Table 1 Descriptive statistics of the study variables (n = 278)

Variable	Possible Range	Actual Range	M	SD
OH experience	4-100	4-77	2.31	1.68
symptoms assessment	0-60	0-47	1.98	1.76
daily activity scale	4-40	4-40	2.81	2.10
Health perception	12-58	25-52	85.39	5.47
Illness perception	0-80	4-67	3.65	1.61
Attitude towards own ageing	0-5	0-5	2.08	0.87
Medication adherence	19-95	36-95	3.77	0.46

Table 2 Standardized regression weights (Estimate), standard errors (SE), critical ratio (C.R), and p-value of the paths

Path	Estimate	SE	C.R.	p-value
Health perception				
➞ OH experience	-.233	.219	-4.095	***
Illness perception				
➞ Medication adherence	.280	.020	5.235	***
➞ OH experience	.270	.064	4.773	***
Attitude towards own aging				
➞ OH experience	.010	.007	.084	ns
Medication adherence				
➞ OH experience	.205	.163	3.735	***

SE = standard error, C.R. = critical ratio (*** = p < .001, ns = non-significant)

Table 3 Direct effect (DE), Indirect (IE) and total effect (TE) of variables in thepaths of OH Experience

Variable	Medication adherence			OH experience		
	DE	IE	TE	DE	IE	TE
Health perception	-	-	-	-.23***	-	-.23***
Illness perception	.28***	-	.28***	.27***	.06***	.33***
Attitude towards own aging	-	-	-	ns	-	ns
Medication adherence	-	-	-	.21***	-	.21***
Path fit		R^2 = .078			R^2 = .234	

*** = p < .001, ns = non-significant

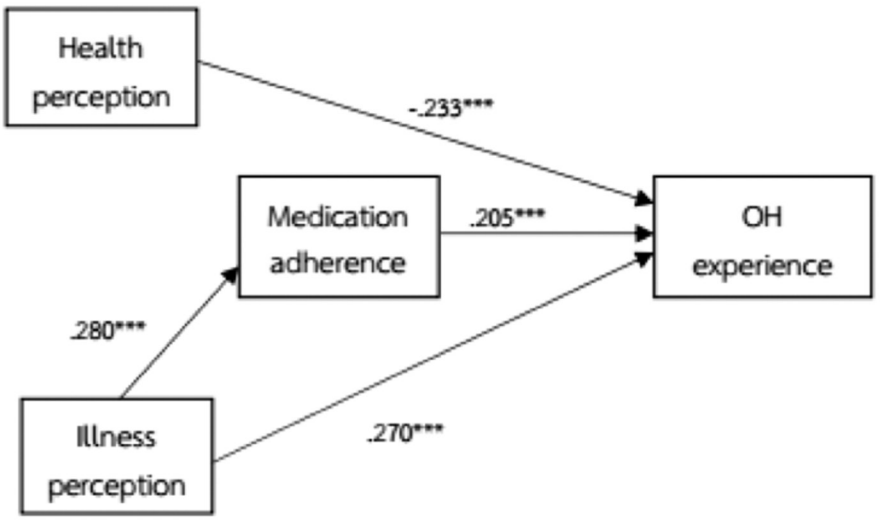

Figure 2 The significant paths of factors influencing OH experience

medical adherence. The R2 for the total significant paths of OH experience was 23.4% of the variance explained. Attitude towards own ageing was found to have no effect on OH experience ($p > .05$). Details were presented in Table 2-3 and Figure 2.

Discussion

The estimated parameter showed a negative direct effect of health perception on OH experience. This implied that older adultswith hypertension who perceived they were rather healthy would have fewer consequences from OH experience. It could be explained that the participants have been diagnosed and taken some medicinesto treat hypertension. They may adjust and perceive that they have normal life like other people since they can control their hypertension, and this would result in no or little experience of OH. It is in accordance with the Symptom Management Theory (SMT)[6] that symptom experience is the combination of perception, evaluation and response of an individual about characteristics and the context of symptom occurrence. The present study found that individuals who perceived themselves ashealthy had less OH symptom experiencein line witha study by Wonder and Dury[21]. In addition, a longitudinal study in COPD patientsfound that health perception in people with COPD was associated with survival, and it was a significant predictor of less acute exacerbation and fewer hospital admissions.[18]

In the present study, the perception of being illhada significant positive direct effect on OH experience. In other words, older adults with hypertension who perceived themselves more ill showed more OH experience.This finding is consistent with a previous study[13] which reported that illlness perception generated a cognitive and emotional process representing the feeling of health threat. Self perceived illness predicted the OH occurrence because OH can result from acondition that produces deficits in hemodynamic responses, excessive decreases in a cardiac output or venous return resulting in hypotension.[8] In addition, illness perception had a positive direct effect on medical adherence; people who perceived themselves more ill weremore likely to adhere to medicine regimes and in control of their health conditions.This is consistent with several previous studies which found a positive relationship between perception of illness and drug adherence.[10], [22-23]

Medication adherence had a direct effect on OH experience. Simply put, older adults with hypertension with better medication adherence weremore likely to experience postural hypotension. This finding was consistent with previous studies in that the most concerned contributing factor of OH occurrence was prescribed medications.[8, 10, 24]

Illness perception had a positive indirect effect on OH experience through medication adherence;medication adherence mediated the relationship between illness perception and OH experience. Hypertensive older adults who perceived themselves as more ill hadincreased OH experience when they adhered more to their medication regime whichis consistentwith previous research.[19]

The predictor that was found to have no effect on OH experience was attitude towards own ageing (ATOA). Although literature shows no clear evidence relationship between ATOA and OH experience, the relationship between ATOA and other conditions, such as depression and menopause, have been found.[19, 20] Therefore, futurestudies are needed to examine the relationship betweenthe attitude towards own ageing on OH experience.

Implications for nursing and recommendations

Nurses and relevant health care providers whocare for older adults with hypertension, especially in community or primary care settings, could apply these findings to plan and develop an intervention to enhance and promote healthy perception of hypertensive older adults. In addition, an intervention to decrease illness perception and enhance ability to self-manage on medication taking may be plausible to the older adults with hypertension who have OH experience. A longitudinal study to explore changes of symptoms by time and across specific age-groups may also be carried out to clearly understand the perceived experience of OH among older adults with hypertension.

Conclusion

This study determined factors influencing OH experience among Thai hypertensive older adults. Health and illness perception, and medication adherence had a direct effect on OH experience, and illness perception had an indirect effect on OH experience through medication adherence. An intervention focusing on increasing health perception, and decreasing illness perception and medication adherence would help lessen OH experience. Further studies with different sample characteristics, a longitudinal design and RCT are needed.

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