Factors Associated with Self-Management Ability among Older Adults with Hypertension in Asia: A Systematic Review of Qualitative Studies

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Abstract

Purpose: To identify and summarize factors associated with self-management ability among older adults with hypertension in Asia from a systematic review.

Design: A qualitative systematic review was performed. A search for qualitative studies published in English from 2008 to 2018 was conducted using CINAHL, PsycInfo, PubMed, Medline, and Google Scholar databases. Ten qualitative studies were included in this review. Conventional content analysis was used to analyze and synthesize findings from qualitative studies.

Main findings: Findings covered the factors found to influence self-management among older adults with hypertension in Asia including: 1) patient-level factors including personal beliefs, attitudes, individual experiences of symptoms, perceptions of physical health, sense of responsibility, sense of control, family responsibility and financial concern, 2) organizational-level factors including time management and communication, and 3) community-level factors including community resources and social support.

Conclusion and recommendations: The findings suggest that self-management ability among older adults with hypertension in Asia are associated with a diverse range of patient-, organizational-, and community-level factors. To assess a person suffering from hypertension the associated factors should be included so that more appropriate strategies and nursing interventions would be developed and adjusted to enhance hypertension self-management behaviors. A conceptual model used for improving hypertension self-management practices should be developed and tested in future research. How factors influencing self-management ability vary between subgroups of patients such as gender and ethnicity should also be explored using qualitative research.

Keywords: hypertension, qualitative research, self-management

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ปัจจัยที่เกี่ยวข้องกับความสามารถในการจัดการตนเองของผู้สูงอายุโรคความดันโลหิตสูงในเอเชีย: การทบทวนวิจัยเชิงคุณภาพอย่างเป็นระบบ

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บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาและสรุปปัจจัยที่เกี่ยวข้องกับความสามารถในการจัดการตนเองของผู้สูงอายุโรคความดันโลหิตสูงในเอเชีย จากการทบทวนวรรณกรรมอย่างเป็นระบบ

รูปแบบการศึกษา: เป็นการทบทวนวรรณกรรมอย่างเป็นระบบเชิงคุณภาพ โดยการสืบค้นหลักฐานเชิงประจักษ์ที่เป็นงานวิจัยเชิงคุณภาพซึ่งตีพิมพ์เป็นภาษาอังกฤษตั้งแต่ปี ค.ศ. 2008 ถึง 2018 จากฐานข้อมูล CINAHL, PsycInfo, PubMed, Medline, and Google Scholar ข้อมูลจากงานวิจัยเชิงคุณภาพจำนวน 10 เรื่อง ถูกนำมาวิเคราะห์และอธิบายโดยใช้การวิเคราะห์เนื้อหาแบบดั้งเดิม

ผลการศึกษา: จากการวิเคราะห์เนื้อหาพบปัจจัยที่มีผลต่อการจัดการตนเองของผู้สูงอายุโรคความดันโลหิตสูงในเอเชีย คือ 1) ปัจจัยระดับบุคคล ประกอบด้วย ความเชื่อส่วนบุคคล ทัศนคติ ประสบการณ์ส่วนตัวเกี่ยวกับอาการ การรับรู้เกี่ยวกับสุขภาพกาย สำนึกความรับผิดชอบ ความรู้สึกและความสามารถในการจัดการตนเอง ความรับผิดชอบต่อครอบครัว และปัญหาทางการเงิน 2) ปัจจัยระดับองค์กร ประกอบด้วย การบริหารจัดการเวลา และการสื่อสาร และ 3) ปัจจัยระดับสังคม ประกอบด้วย ทรัพยากรชุมชน และแรงสนับสนุนทางสังคม

สรุปและข้อเสนอแนะ: การทบทวนวรรณกรรมนี้พบว่า ปัจจัยที่มีความเกี่ยวข้องกับความสามารถในการจัดการตนเองของผู้สูงอายุที่เป็นโรคความดันโลหิตสูงในเอเชีย มีความหลากหลาย ทั้งในระดับบุคคล องค์กร และสังคม บุคลากรสุขภาพจึงควรมีการประเมินปัจจัยที่เกี่ยวข้องกับการจัดการตนเองในผู้ป่วยโรคความดันโลหิตสูง เพื่อพัฒนากลวิธีที่เหมาะสมและปรับเปลี่ยนรูปแบบการพยาบาล เพื่อส่งเสริมพฤติกรรมการจัดการตนเองเกี่ยวกับโรคความดันโลหิตสูงในประชากรกลุ่มนี้ การวิจัยในอนาคตควรพัฒนาและทดสอบแบบจำลองความคิดที่สามารถใช้ในการส่งเสริมพฤติกรรมการจัดการตนเองเกี่ยวกับโรคความดันโลหิตสูง และการวิจัยเชิงคุณภาพควรค้นหาว่าปัจจัยที่มีผลต่อความสามารถในการจัดการตนเองมีความแตกต่างกันอย่างไรในกลุ่มผู้ป่วยที่ต่างกัน เช่น เพศ และเชื้อชาติ

คำสำคัญ: ความดันโลหิตสูง วิจัยเชิงคุณภาพ การจัดการตนเอง

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Introduction

Hypertension is very common among older adults in many Asian countries[1]. For example, the prevalence of hypertension among older adults is 66.18% in China[2], 54.5% in Malaysia[3], and 58% in Taiwan[4]. The prevalence of hypertension and uncontrolled hypertension contributes to the present pandemic of morbidity and disability, mortality, high economic costs, and loss of quality of life for patients and families[1]. The success of hypertension care depends on the patient's ability to perform hypertension self-management which involves a complex and multifactorial process[5].

Hypertension self-management has been identified as a critical component in hypertension management[5]. Successful management requires patients to engage in a range of activities including: (1) medication adherence, (2) self-blood pressure monitoring, and (3) lifestyle modifications involving dietary changes, exercise, restriction of alcohol intake, and quitting smoking[5]. Preventing the serious complications of hypertension requires patients to incorporate these lifestyle changes into their daily routines along with a high level of adherence[6].

Previous studies documented that hypertension self-management is suboptimal among Asian older adults with hypertension[7-8]. High levels of poor adherence to hypertension self-management such as dietary change and blood pressure self-monitoring have been reported in this population. Moreover, they did not adhere to medication regimen, for example, they purposely had skipped taking medications or forgot to take their medications[7]. The reasons for medication non-adherence are not well known, suggesting a critical need to identify factors influencing hypertension self-management behaviors and to develop interventions that will effectively target such factors. Quantitative studies have previously reported facilitators and barriers to hypertension self-management[6,9]. However, there is a lack of knowledge about how these factors influence self-management process based on Asian older adults' experience or perspective, and lacked knowledge on how these factors operate in the daily lives of Asian older adults. In addition, no prior systematic reviews or syntheses of qualitative studies have been conducted.

To address these gaps in knowledge, it is important to capture and synthesize findings from qualitative research on factors associating with self-management among Asian older adults to gain understanding and to provide directions for future research. Consequently, this paper reports a systematic review of qualitative research[10] focusing on the factors associating with self-management among Asian older adults. This systematic review of qualitative research will assist in targeting and tailoring self-management interventions for older adults with hypertension in Asia.

Objective

This systematic review was undertaken to synthesize qualitative research evidence on the factors associated with self-management ability among older adults with hypertension in Asia. This review was to answer the following question: 'what factors are associated with self-management among older adults with hypertension in Asia and how?'

Design

A qualitative systematic review was conducted using Butler's methodology[10].This method was developed specifically to guide researchers conducting qualitative systematic reviews that aim to present a comprehensive understanding of individual experiences and perceptions.

Eligibility Criteria

Inclusion criteria for searching included: (a) period of publication (2008-2018), (b) language (English), (c) type of journal (academic), (d) research subject (human), and (e) age (60 years or older).

Table 1: Inclusion and exclusion criteria

Criteria	Justification
Study participants are men and women with hypertension aged ≥60 years who live in a rural and urban setting of Asian countries	The review focused on older adult population with hypertension both urban and rural areas in Asian countries. Any studies which included older adults with hypertension outside Asian countries were excluded, because of the difference in the context.
Study objectives that relates to the factors associating with hypertension self-management	Any studies which did not focus on factors associating with hypertension self-management were excluded.
Examines older adult experiences, perspectives, attitude or feelings as a primary aim	Older adult experiences, perspectives, attitude or feelings surrounding hypertension self-management must be a primary aim of each study. Studies that did not relate to self-manage hypertension or healthcare providers' perspective were excluded, owing to the expansive number of reviews on each topic.

Table 1: Inclusion and exclusion criteria

Criteria	Justification
Original qualitative data	The review focused on the experiences, attitude, feelings or perspectives of older adults, which was most appropriately answered through qualitative research. Qualitative data from a mixed methods study was included. Any study which utilized survey data or statistical reporting of results and grey literature (e.g., dissertation studies, books, published abstracts, conference proceedings, etc.) were excluded.

Search Strategy

The electronic databases CINAHL, PsycInfo, PubMed, Medline, and Google Scholar were searched using Medical Subject Headings (MeSH) key words including: "hypertension", "high blood pressure", "self-management", "self-care", "qualitative research". The literature search was undertaken between June and August, 2018.

Search Outcome

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines11 was used to report the selection and exclusion of studies. A flow diagram describing the selection of studies is shown in Figure 1. The initial search identified 1,510 studies. Reference lists from each study were hand-searched for additional relevant studies, resulting in an additional two studies. Then, 419 duplicates were removed. The first author and second author independently screened titles and abstracts for the remaining 1,091 studies. After screening, 1,051 studies were excluded due to not meeting criteria as they were conducted outside Asian countries and quantitative studies. Forty studies met inclusion criteria and were reviewed in full. Next, during the preliminary review of full-text of each study, 30 studies were excluded due to not meeting inclusion criteria for the following reasons: a) being a quantitative study (n = 8); b) conducting interviews with Asian immigrant population outside Asian countries (n = 3); c) lacking focus on self-management (n = 7); and d) being grey literature (n = 12). The final set of 10 studies, including two generated from hand searching, varied in terms of design, population, aims, and findings as they focused on different things (Table 2).

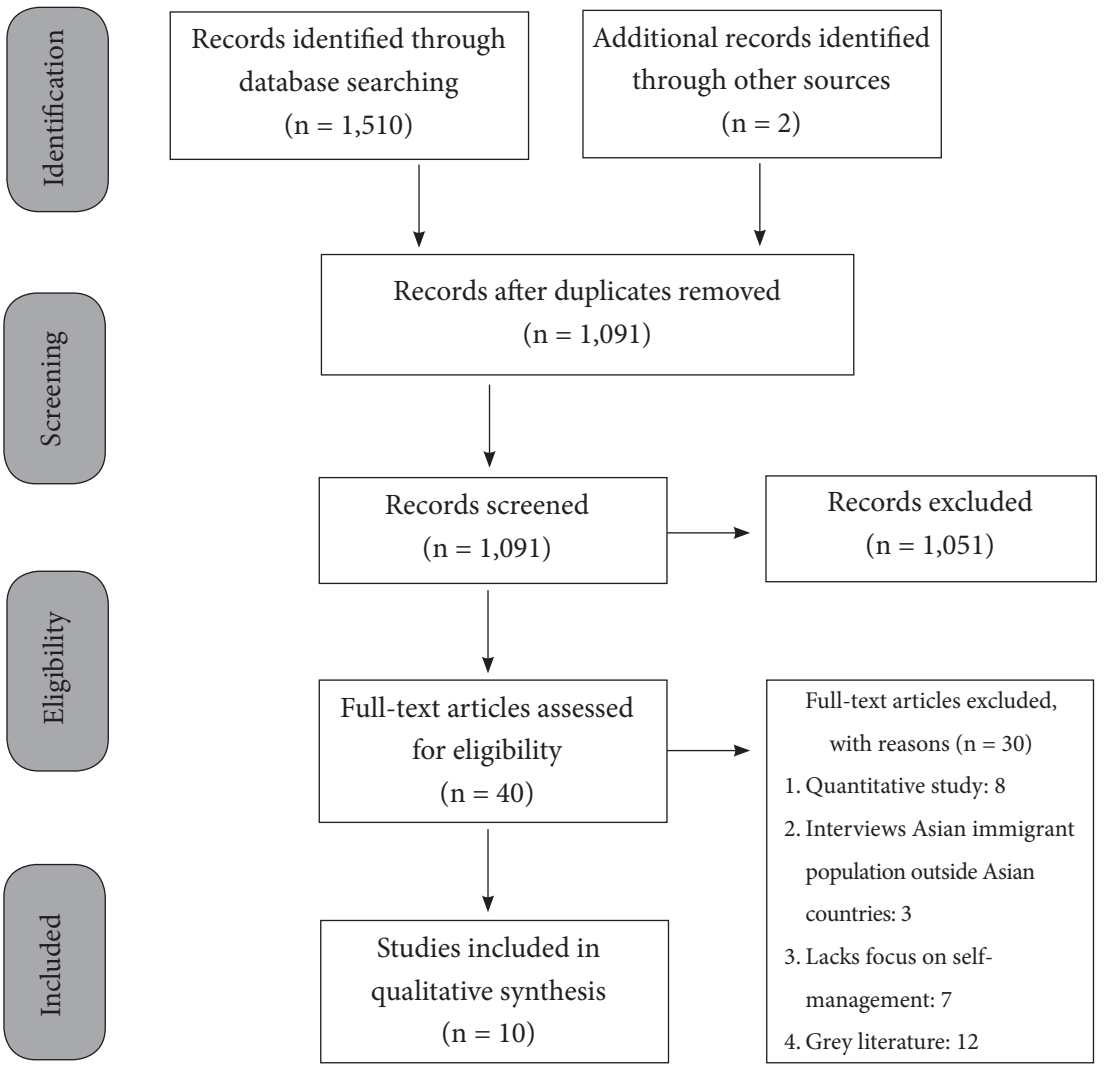

Figure 1: Flow diagram of included studies through review process

Study Selection

After obtaining all of the studies resulting from searching the electronic databases, duplicates were removed. The authors independently screened the title and abstract of each study. The authors also discussed whether to include each study, and came to an agreement about any differences. The full-text of studies that appeared to meet the inclusion criteria were obtained for further screening. The authors independently conducted preliminary screens of each article, and determined which studies met the above inclusion criteria. Then, the authors read the full-text of each study in detail.

Data Extraction

The authors read each study and extracted: a) authors; b) year of publication;

c) country; d) study design; e) study purpose; f) participants; g) setting; h) data collection and analysis techniques; i) findings relevant to the review. The authors entered this information into a table to allow for comparison across articles (Table 2).

Table 2: Overview of studies

Author, County	Study design	Purpose	Participants / Setting	Data collection / Data analysis	Findings relevant to factors influencing self-management
Udompittayason, Boonyasopun and Songwathana[12] Thailand	Ethnographic study	Explore the perception on hypertension	11 Thai-Melayu older adults Rural village in Southern	Data collection: In-depth interview, observation and focus group Data analysis: Thematic analysis	Patients stopped taking medication and not change their lifestyle due to the absence of symptom. They only took medication when they had clinical symptom such as headache. Patients believed that the cause of hypertension is the imbalance of Leard (blood) and Lom (wind), leading them not to change their behavior.
Suthipan and Intarakamhang[13] Thailand	Qualitative focus group study	Explore barriers and facilitators associated with healthy lifestyle behavior	10 older adults Urban area in Northern	Data collection: Focus group Data analysis: Content analysis	Patients described that a lack of motivation regarding lifestyle modification due to perceived poor physical health as the barriers for adopting healthy lifestyle behavior. There was a lack of safe or affordable places to exercise. Family members motivated patients in hypertension management such as taking medications.

Table 2: Overview of studies

Author, County	Study design	Purpose	Participants / Setting	Data collection / Data analysis	Findings relevant to factors influencing self-management
Thongtang and Seesawang[7] Thailand	Conventional content analysis approach	Explore self-care among Thai older adults with hypertension	30 Thai older adults f = 20, m = 10 Urban area in Western	Data collection: in-depth interview Data analysis: conventional content analysis	Patients received support from family to manage their hypertension, such as taking medication, eating habit, and exercise.
Woodham, et al.[14] Thailand	Directed content analysis approach	Gain better understanding of perspective on living with hypertension and how they manage medication at home among elderly hypertension	30 older adults f = 17, m = 13 Rural areas	Content analysis	Patients perceived that taking medications would cause other serious health problems. Patients with no sign and symptoms believed that there was no reason to continue taking medication.
Kitreerawutiwo, and Mekrungrongwong[15] Thailand	Qualitative approach using in-depth interviews and focus group	Explore factors affecting health behavior and health needs in the elderly	40 older adults Rural area	Data collection: In-depth interview and focus group Data analysis: content analysis	Patients received support from family and group in motivating them to change eating behavior and do exercise. Patients used their time to take care small children and did not have time to take care themselves, such as forgot to take medication.
Zhang, Shan and Jiang[16] China	A qualitative descriptive design	Investigate the meaning of life and health experience of Chinese elderly	11 older adults f = 6, m = 5 Urban areas	Data collection: In-depth interview Data analysis: Thematic analysis	Patients expressed that they must care for themselves and they have the power and responsibility to take care of themselves such as exercising.

Table 2: Overview of studies

Author, County	Study design	Purpose	Participants / Setting	Data collection / Data analysis	Findings relevant to factors influencing self-management
Long and Li[17] China	A qualitative narrative design	Explore health-seeking behaviors through which elders manage diagnoses, treatment, and health care.	24 Chinese elders and 24 caregivers f = 12, m = 12 Urban and rural areas	Data collection: semi-structured interview Data analysis: an abductive approach	Patients concentrated on fulfilling their responsibility as member s of their households. Thus, they were not interested in learning to manage their disease and complications. Patients in rural area with insufficient income impacted on ability to acquire food and medication.
Nayeri, Dehghan and Iranmanesh[18] Iran	Conventional content analysis approach	Explore patients, their families, and healthcare providers' experiences about hypertension treatment adherence	10 older adults f = 5, m = 5 Urban areas	Data collection: semi-structured interview Data analysis: conventional content analysis	Patients had a negative attitude toward the disease, treatment, doctor, and medication, for example, they believed that their body had ability to recover itself and did not want to use medication. They believed that their body is a loan from God and they paid attention to what they ate and how to care of this loan. It was difficult to resist when their relatives or friend offer them unhealthy food.

Table 2: Overview of studies

Author, County	Study design	Purpose	Participants / Setting	Data collection / Data analysis	Findings relevant to factors influencing self-management
					Patients experienced a positive impact of supportive family atmosphere on adhering to treatment regimen including eating safe foods, exercising, recalling medication usage, and following appointment. Patients complained that health offices were often crowded and there was little time to consult physician.
Khezri, et al.[19] Iran	Directed content analysis approach	Explore the challenges in self-management empowerment	9 older adults Urban areas	Data collection: semi-structured interviews Data analysis: directed content analysis	Patients perceived that even they were old; they were able to control their disease by complying with medication regimen and exercising.
Kang, et al.[20] South Korea	A qualitative narrative design	Explore how older Korean adults perceive and cope with their chronic illness	13 older adults Urban areas	Data collection: focus group Data analysis: content analysis	Patients experienced not being heard or considered by doctors.

Quality Appraisal

The authors critically appraised of each study using the QualSyst Tool for Qualitative Studies[21]. The ten items include (1) sufficient description of question/objective,((2) evident and appropriate study design, (3) context for the study clearly described, (4) connection to a theoretical framework or wider body of knowledge, (5) sampling strategy described, relevant and justified, (6) data collection methods systematic and clearly described, (7) data analysis systematic and clearly described, (8) verification procedure(s) used to establish credibility, (9) conclusions supported by the results, and (10) evidence of researcher reflexivity. These 10 questions were scored depending on the degree to which the specific criteria were met (no = 0, partial = 1, yes = 2).

The author added all the scores for all items to obtain a total score, dividing this by the total possible score to obtain the summary score (Table 3). For each study, a maximum total score of 20 and a maximum summary score of 1 was possible. Studies that failed to meet the minimum summary score of .55[19] were not included. The cut-point of .55 is the minimum recommended threshold for inclusion for qualitative studies[21]. All studies met this minimum level. Overall score ranged from 0.70 to 1.00. Our review is therefore grounded on findings of an overall 'good' methodological quality. Common weaknesses within the 10 included studies were mainly around the lack of a clear description of analysis; and limited contextual information about participants.

Table 3: Quality assessment for qualitative studies with QualSyst Tool

Studies	Quality Assessment Criteria for Qualitative Studies											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total Score**	**Summary score**
Udompittayason, Boonyasopun and Songwathana[12]	2	2	2	1	2	2	2	2	2	2	19	19/20 = 0.95
Suthipan and Intarakamhang[13]	2	2	1	2	2	2	2	0	2	1	16	16/20 = 0.80
Thongtang and Seesawang[7]	2	2	2	2	2	2	1	2	2	1	18	18/20 = 0.90
Woodham, et al.[14]	2	2	2	2	2	1	1	2	2	1	17	17/20 = 0.85
Kitreerawutiwo and Mekrungrongwong[15]	2	2	1	1	2	2	1	1	1	1	14	14/20 = 0.70
Zhang, Shan and Jiang[16]	2	2	2	2	2	2	2	2	2	1	19	19/20 = 0.95
Long and Li[17]	2	2	2	2	2	2	2	0	2	1	17	17/20 = 0.85
Nayeri, Dehghan and Iranmanesh[18]	2	1	2	2	2	2	2	2	2	2	19	19/20 = 0.95
Khezri, et al.[19]	2	2	1	2	2	1	2	1	2	1	16	16/20 = 0.80
Kang, et al.[20]	2	2	1	2	2	2	1	0	2	0	14	14/20 = 0.70

Note: The QualSyst tool for qualitative studies: 1. Question / objective sufficiently described?; 2. Study design evident and appropriate?; 3. Context for the study clear?; 4. Connection to a theoretical framework / wider body of knowledge?; 5. Sampling strategy described, relevant and justified?; 6. Data collection methods clearly described and systematic?; 7. Data analysis clearly described and systematic?; 8. Use of verification procedure(s) to establish credibility?; 9. Conclusions supported by the results?; 10. Reflexivity of the account? (2 = Yes, 1= Partial, No = 0)

Data Synthesis

Data synthesis was performed using conventional content analysis[22]. The authors initially read and immersed themselves in the data from manuscripts to obtain a sense of the whole and recorded first impressions. Next, we developed codes reflective of categories and concepts reported in the ten studies. Categories were inductively developed by grouping codes based on similarities and differences, and organizing codes into meaningful clusters[22]. Categories were an expression of manifest content, for example, what is obvious in the data and category names were factual. For instance, category "patient-level influence" demonstrated factors at individual level that influenced hypertension self-management.

This synthesis revealed a range of factors affecting hypertension self-management that were grouped into three board categories: patient-level influences, organizational-level influences and community-level influences on hypertension self-management as identified in the ten studies (Table 4).

Table 4: Categories of factors affecting self-management and associated codes

Categories	Sub-categories	Codes
Patient-level influences and hypertension self-management	Personal beliefs	• Perception of cause of hypertension • Self-manage is inconvenient • Cultural belief/value/practice (e.g., food and traditional medicine) • Spiritual belief in God • Negative attitude towards healthcare provider
	Attitudes	• Negative attitude towards Western medicine (e.g., adverse effect)
	Individual experiences of symptoms	• Appearance of symptoms • Absence of symptoms
	Perceptions of physical health	• Perceptions of poor physical health
	Sense of responsibility	• The responsibility of the healthy
	Sense of control	• Self-perceived control of own health
	Family responsibility	• Focusing on family work • Time constraints of family work affect time to self-manage
	Financial concerns	• Insufficient income to self-manage (e.g., buying healthy food)

Table 4: Categories of factors affecting self-management and associated codes

Categories	Sub-categories	Codes
Organizational-level influences and hypertension self-management	Time management	• Lack of time for consultation • Longer waiting time • Lack of active discussion
	Communication	• Perceive doctors do not listen to patients
Community-level influences and hypertension self-management	Community resources	• Exercise environment • Lack of public place for exercise
	Social support	• Perceived support (family, peer) • Participation in peer support

Findings

Overview of Studies

This review included 7 studies involving Asian older patients with hypertension and only 3 studies involving Asian older patients with hypertension who had one or two comorbidities (e.g., diabetes and heart disease). These 3 studies presented results that were specific to hypertension self-management among Asian older adults. The study participants ranged in age 60-95 years. Both men and women were included in all selected studies.

Methodologies used in reviewed studies included; narrative approach (n = 2), conventional content analysis (n = 3), directed content analysis (n = 4), and ethnography (n = 1). In terms of location, 5 were from Thailand, 2 were from China, 2 were from Iran, and one was from South Korea. Three studies were conducted in rural areas, 6 studies in urban areas and only one study was conducted both in urban and rural areas of Asian countries. The sample sizes varied from 9 to 44 and included both male and female patients in each study.

Detailed Results

The results of this review include a synthesis of the factors that were found to influence self-management among Asian older adults with hypertension. In each of the included studies, Asian older adults were interviewed using open-ended questions such as "how you manage your hypertension" "What is your view of the factors that support you to manage your hypertension" "What do you think the obstacles might be when managing hypertension." Study results focused on perceptions of hypertension, knowledge about hypertension and its treatments, reasons for poor treatment adherence, self-management approaches, and the factors influencing Asian older adult's self-management. In this review, several included studies contributed to each of sub-categories (e.g., personal belief and social support), while only one study contributed to sense of responsibility and time.

The three main categories synthesized from the literature are shown in Table 5 below.

Table 5: Overview of categories and sub-categories

Theme/sub-theme	Study 1[12]	Study 2[13]	Study 3[7]	Study 4[14]	Study 5[15]	Study 6[16]	Study 7[17]	Study 8[18]	Study 9[19]	Study 10[20]
Patient-level influences and hypertension self-management										
• Personal beliefs	✓							✓		
• Attitudes				✓				✓		
• Individual's experience of symptoms	✓			✓						
• Perceptions of physical health		✓								
• Sense of responsibility						✓				
• Sense of control									✓	
• Family responsibility					✓		✓			
• Financial concern							✓			
Organizational-level influences and hypertension self-management										
• Time management								✓		
• Communication										✓
Community-level influences and hypertension self-management										
• Community resources		✓								
• Social support		✓	✓		✓			✓		

Patient-level influences and hypertension self-management. Patient level influences were associated with the individual life style and beliefs that affected their ability to self-manage. Sub-themes included "personal beliefs", "attitudes", 'individual symptom experiences", "motivation", "sense of responsibility", "sense of control", "family responsibilities", and"financial concerns".

Personal beliefs. Cultural and spiritual beliefs influenced hypertension self-management. In one study, upon receiving a hypertension diagnosis, older adults expressed a belief that the imbalance between Leard (blood) and Lom (wind) caused hypertension, and was related to inappropriate behavior such as eating habits and hot and cold body temperature and environment[12]. This belief led them to use traditional medicine while not changing their behavior as recommended by healthcare providers. Another study[18] found that some older adults with hypertension viewed diet as an integral part of social gatherings, finding that it was difficult to maintain their dietary restrictions during social gatherings when others were eating and drinking food not recommended for people with hypertension. Spiritual beliefs about illness were also found to influence self-management behavior. For example, Iranian older adults believed that the outcome of hypertension was in the "God's hands" and their body was a loan from god[18]. Thus, the idea of self- management, of personal control, was not an option to them.

Attitudes. Older adults with hypertension who demonstrated their attitudes and views toward illness, treatment, healthcare providers, and medications did not want to engage with self-management behavior. For example, they believed that western medications had more problems than benefits[18] and that taking medications would cause other serious health problems[14]. Thus, they decided not to take medications to decrease their high blood pressure.

Understanding of symptoms. Older adults with hypertension reported that they stopped taking medication and decided not to change their lifestyle behaviors because they had no symptoms. They only took medications when experiencing clinical symptom such as headache and dizziness[12]. Similarly, older adults with no symptoms believed that there was no reason to continue taking medication, or changing their lifestyle, or adopting preventive behaviors such as exercise[14].

Perceptions of physical health. One study found that perceptions of poor physical heath interfered with motivation to make changes related to hypertension management[13]. Hypertensive older adults with perception of poor physical health were less likely than others to engage in physical activities. Perceptions of poor physical health made them wanted to stay at home and watch television and did not want to engage in exercises.

Sense of responsibility. Findings suggested that older adults with hypertension and other chronic conditions such as diabetes

and heart disease who believed they had a responsibility to take care of themselves were more likely than others to view self-management as important to achieving a good quality of life[16]. In addition to feeling responsible for themselves, they believed that taking care of themselves would prevent them from adding burden to their country.

Sense of control. Hypertensive older adults with a sense of control over their illness were more likely to trust their ability to engage self-management behavior than those with poor sense of control over their illness[19]. They were also more likely to have stronger confidence in their ability to manage their hypertension independently.

Family responsibility. Some older adults with hypertension and other chronic conditions such as heart disease and diabetes reported focusing on their family responsibility, such as earning an income or caring for small children. These older adults expressed a lack of interest in managing their disease as it would redirect their focus and interfere with their ability to engage in these other activities. This was the explanation some older adults gave for failing to take medications[15,17].

Financial. One study reported financial concerns influencing that ability to self-manage. Insufficient income limited their ability to purchase healthy food, medications, and transportation to healthcare provider appointments[17].

Organizational-level influences and hypertension self-management. Only two studies addressed organizational-level issues that influenced individual ability to self-manage[19-20].

Time management. One study found that many older adults with hypertension described having insufficient time to consult with providers about their concerns due to short visits[18]. Thus, they experienced rarely having a chance to discuss or learn about realistic self-management strategies that they can implement at home. Sometimes, they experienced long waiting time which made them were frustrated at the healthcare office.

Communication. One study found that older adults with hypertension reported feeling they received inadequate attention from healthcare providers[20]. They perceived that doctors did not listen to patients. Sometimes, they experienced not being considered when talking about having trouble with self-management. Moreover, their doctors did not actively discuss hypertension management strategies such as following an appropriate diet or regular exercise but only mentioned not eating salty food, taking medications, and exercising.

Community-level influences and hypertension self-management. Community-level influences included two sub-categories: a) community resources and b) social support facilitating or inhibiting self-management efforts.

Community resources. One study reported inadequate community resources affecting self-management among older adults with hypertension such as lacking access to places for participating in physical activities. Some abandoned the idea of exercising due to lack of safe or affordable places to exercise[13].

Social support. Some older adults with hypertension reported that receiving support from others encouraged them to self-manage and assisted them in making and maintaining lifestyle changes, especially support from families. Older adults often shared their hypertension management strategies with family members who could provide assistance with daily self-management tasks such as reminding to taking medications, preparing appropriate food, and attending appointments. Families also provided emotional support that could motivate older adults to engage with self-management[7,13,18]. In addition to family support, peer provided emotional support and suggestions about reducing salt or taking medications which increased their confidence to engage in self-management activities[15].

Discussion

The purpose of this systematic review was to synthesize evidence on the issues that influenced the ability of Asian older adults to self-manage hypertension. Older adults were found to face several issues that affected their ability to engage effectively in managing their own health care. Findings showed that patient-level (e.g., cultural belief, negative attitude regarding medication, and lack of motivation), organizational-level influences (e.g., lack of attention and time from healthcare provider)), and community-level influences (e.g., support from others) can sway ability to self-manage among Asian older adults with hypertension.

The three main categories that characterized the literature on issues influencing ability to self-manage among older adults were patient-level, organizational-level, and community-level. These findings are congruent with factors influencing self-management in patients with chronic obstructive pulmonary disease[23] and in adult patients with diabetes[24] that have been reported by others.

Comparing to self-management in different illnesses, systematic review on experience of self-management among diabetic patients found different influencing factors. For example, communication with healthcare providers and consistent, understandable and specific education to facilitate self-management was found to affect self-management behaviors[24]. Another systematic review found that only personal factors, including health beliefs, perceived susceptibility, perceived barriers, and self-efficacy were associated with diabetes self-management behaviors[25]. An integrative review of factors influencing self-management of chronic obstructive pulmonary disease showed other factors that influenced patient self-management including physical status and

presence of symptoms (e.g., dyspnea and functional impairment) and existential determinants (e.g., meaning of life and religiosity) as most influential on self-management[23].

Personal beliefs are an important issue influence on individual's ability to self-manage their hypertension. In a qualitative study of self-manage in diabetes[26], documented that patients who believed in their ability to control diabetes, had a positive outlook about their quality of life, and were willing to make changes in their lifestyle were more likely to change eating habit and exercise. Moreover, researchers[27] found that patients who believed their symptoms would resolve on their own postponed appointments with their healthcare providers.

Social support also played important role in hypertension self-management. In this review, social support from family and peers has been reported to improve hypertension self-management behavior that was consistent with other illnesses such as diabetes and chronic obstructive pulmonary disease[23-24]. Social support can promote patients to engage in healthy diet, physical activities, and decision to contact healthcare providers[6,9,27]. Pertaining to support from healthcare providers, this review presented that older adults with hypertension were often experienced insufficient consultation time from their healthcare providers.

Even though the review includes studies from different countries, there are still many unanswered questions about self-management in hypertension that are important to explore if effective interventions are to be developed. In this review, the participants of included studies were mixed between older men and women. Our search did not yield any studies that focused on differences between populations. Better distinctions in the experiences of these subgroups were not generally visible. Thus, it should be taken into account when interpreting the obtained results. There is a possibility that the generalizability of our findings may be limited as no data were found around how perceptions and factors influencing ability to self-manage may vary between and within different social groups.

To provide a foundation for research on factors influencing ability to self-manage, this review took a broad perspective among Asian older adults. Nevertheless, this systematic review does not provide a complete profile of what may help or impede self-management in hypertension. Another limitation, our sample included older adults with other chronic disease such as diabetes and heart disease. Studies did not identify factors both common among and specific to self-management of different chronic illness that may differ across the illness trajectory. Moreover, only published studies and only English-language articles were included that may affect the results of the review.

Conclusion and Recommendations

Hypertension is a chronic condition that requires self-management behaviors which

involves a shift from being controlled by hypertension to an ability to limit the impact of the condition. This review has found some evidences that a diverse range of patient-level influences, organizational-level influences, and community-level influences are associated with the individual's ability to self-manage among Asian older adults living with hypertension. Synthesizing qualitative evidence suggests that healthcare providers working with older adults who have hypertension have to consider those factors that influence ability to self-manage. In order to facilitate further development of theory for Asian older adults with hypertension, future studies should attempt replication among those with different backgrounds.

Implications for practice and policy

Healthcare providers should provide more attention to individual by giving more chances for individual to discuss their concerns and discussion needs to be sensitive to the social, cultural or financial distinctions. Length of appointment with healthcare provider is an important aspect for supporting an individual to effectively self-manage and facilitate the needs of older adults with hypertension and their confidence in managing their condition. To promote the individual incorporate hypertension self-management into their daily life, exercise and dietary recommendations should align with the individual's social circumstances and cultural beliefs. In addition, convening support groups that peers led to facilitate the sharing of ideas should be provided to promote learning self-management strategies through other experiences. Innovative programs and initiatives that address these barriers warrant attention.

Hypertension self-management should be considered a national focus in Asian countries, strengthening services to assist older adults in managing their hypertension. Health policy to support national programs for improving hypertension self-management and better hypertension control based on local culture, financial characteristics, healthcare systems, and available resources in Asian countries is needed.

Implications for further study

Future research in the area of self-management should focus on developing and testing a conceptual model based on the results of this review that can be used to enhance hypertension self-management behaviors. Finally, to contribute to long-term reduction in hypertension-related mortality, researchers should focus on how best to tailor interventions to improve self-management and should examine ways to extend and maintain hypertension self-management practices among Asian older adults.

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