The Experience of Living with Hypertension: Lessons from a Cohort of Older Men

By

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Abstract

Background: Poor adherence to treatment and poorly controlled hypertension are common in older men, especially in rural areas. Knowledge about the experience of living with hypertension among older men is important for developing nursing practices to enhance treatment adherence. However, little is known about the personal experiences of older men with hypertension. This dissertation includes three papers that address the following: (1) the experiences of men with hypertension, based on a review of literature, (2) factors influencing the ability to self-manage hypertension among older adults in Asian countries, based on a review of qualitative studies, and (3) grounded theory study exploring the experiences of 29 older Thai men living with hypertension in rural areas.

Results: The first paper presents an integrative review of relevant literature on the experiences of men living with hypertension. The second paper is a systematic review of qualitative evidence that provides information about factors influencing the ability to self-manage hypertension among older adults in Asian countries. The third paper addresses the knowledge gap about experiences of older Thai men living with hypertension in rural areas, using a grounded theory approach to develop a conceptual model called “developing a personal sense of risk”. This conceptual model provides guidance for assessing one’s personal risk of developing hypertension-related complications among older Thai men and can help to improve risk communication, develop a standard tool to assess perceptions of personal risk, and also develop storytelling interventions to motivate behavior change.

Conclusion: This dissertation study adds to our current knowledge about the experiences of older men with hypertension. This study also proposes an innovative conceptual model for understanding the personal sense of risk for developing hypertension-related complications
among older Thai men from rural areas. Finally, this study can inform the development of effective interventions to improve adherence to treatment and blood pressure control among older men with hypertension who live in a rural area.
Chapter 1

Introduction
Background

Hypertension has become a serious worldwide public health problem, being most prevalent in adults aged 60 years and older (WHO, 2013). Hypertension is the leading global preventable risk factor for cardiovascular disease, stroke, and renal dysfunction (Bromfield & Muntner, 2014). Thailand is currently experiencing a high prevalence of hypertension and high rate of hypertension complications (Thawornchaisit et al., 2013; Khumtaveeporn & Jirathummakoon, 2015). Heart disease and stroke, which are often associated with uncontrolled hypertension, have become the leading causes of death and disability among older male patients in Thailand, especially in rural areas (Aekplakorn et al., 2012, Suwanwela, 2014). Managing patients with uncontrolled hypertension is challenging since the reasons for failure to control blood pressure are complex. Promoting patients’ behavior change, including adherence to treatment may be influenced by several factors such as habitual lifestyle behavior and perceptions of illnesses (e.g. perception about the cause of an illness, the symptoms that are part of the condition, the consequences of the illness, and how the illness is controlled or cured) and its adverse outcomes (Power et al., 2008; Kausar, Awan, & Khan, 2013).

An individual’s experience is thought to play a significant role in their treatment adherence and adoption of healthy behaviors (Allen, Purcell, & Dennison, 2010; Sheeran, Harris, & Epton, 2014). For example, when persons experienced considerable difficulties controlling blood sugar levels and blood pressure or the consequences of disease processes, they are more likely to take action to manage their disease and prevent an adverse health outcome (Price et al., 2009; McKenzie & Skelly, 2010; Tawfix & Mohamed, 2016). Poor adherence to treatments and lifestyle changes for hypertension remains a worldwide problem, including for Thailand. Older male patients with hypertension had low adherence to medication, exercise and dietary regimens.
The number of patients with inadequate blood pressure has remained constant (Mahmoud, 2012; Vrijens et al., 2017). Thus, there is a need to discover experience of living with hypertension among hypertensive older rural Thai men who exhibited poor adherence to recommended health behavior and how their experience influences health-related behavior. Better understanding the experience of older rural Thai men living with hypertension may help in promoting successful of hypertension management including effective behavior change interventions.

**Significance**

Hypertension is not only the most frequent chronic health problem experienced by Thai older people but is also a leading risk factor for stroke and coronary events (Puavilai, Prompongs, Srriwiwattnakul, & Srilert, 2011; Thawornchaisit et al., 2013). The most recent government survey documented that 59.4% of total Thais over 60 years had hypertension (Aekplakorn et al., 2012) and a statistically significant higher prevalence of hypertension in Thai older men than women, 58.3% and 49.3%, respectively (Aekplakorn et al., 2011). In addition, studies have reported lower control rates in rural, compared to urban, settings (Aekplakorn et al., 2012; Chongthawonsatid, 2015; Leelacharas, Kerdonfag, Chontichachalalauk, & Sanongdej, 2015).

In Thailand, although progress has been made in prevention, detection, control, and treatment of hypertension, there is continuing poor hypertension management among Thai older men. Blood pressure control was lower in Thai older men (25.2%) than Thai older women (30.5%) (Aekplakorn et al., 2012). Thanakwang and Kunnasit (2009) reported that fewer than half of older men, were aware of and received treatment for their hypertension, or had achieved sufficient control. Similarly, blood pressure control was lower in men than women in Korea (7.7% vs 14%) and in Taiwan (21% vs 28.5%) (Cheung & Cheung, 2012). Moreover, among
men in Thailand, blood pressure control was also lower in rural areas than in urban areas (17% versus 21%) (Sinsap & Jankra, 2017). The same trend was observed in Africa, with a prevalence of control among treated hypertensive men much lower in rural than in urban areas (7.7% versus 52.3%) (Damasceno et al., 2009). Several studies have documented that Thai older men are at greater risk for complications of hypertension than Thai older women. This higher risk is reflected in the higher incidence of stroke in Thai older men than women (Aekplakorn et al., 2012; Leelacharas et al., 2015; Nilanont et al., 2014). For example, the prevalence of ischemic stroke across people with hypertension was 3.59% for Thai older men and 2.80% for older Thai women (Suwanwela, 2014). Hypertension is a chronic disease that puts an individual at risk for long-term health problems.

Research on patients’ knowledge about their hypertension suggests that patients perceived hypertension as a chronic lifelong condition. Leelacharas at al. (2015) reported that Thai women consider hypertension as permanent, rather than temporary. Thai women perceived that living with hypertension for a long time increased the risk of hypertension complications such as renal failure and stroke. Thus, they followed providers’ recommendations to take medications and reduced salty food. Another study (Rahman et al, 2015) exploring the perception of hypertension among men and women in Asian countries including Thailand also found that patients perceived hypertension as a chronic lifelong condition. They realized that hypertension could lead to severe consequences such as heart disease, stroke, and paralysis from stroke. Most patients agreed one or both of heart attacks and strokes as the reasons to treat hypertension and adopted healthier behaviors. In contrast, another study among older Thai Malays men and women (older people with ethnic Malays in Thailand) reported that patients viewed hypertension as a common illness which can be easily cured (Udompittayason,
Boonyasopun, & Songwathana, 2015). Patients realized a danger of hypertension only when obvious and severe symptoms occurred such as; fatigue, palpitation, or when they were unable to work. These experiences led them to manage their hypertension by taking medications and changing eating behavior. However, these studies (Leelacharas at al., 2015; Rahman et al, 2015; Udompittayason et al., 2015) did not report specific results for older men.

Beliefs and Adherence

Research focusing on beliefs of men about hypertension demonstrates that their beliefs are often contrary to their knowledge. A study from the US (Bennett, 2013) attempted to understand the beliefs and attitudes of men toward hypertension among 17 African American men (ages over 45). The study found that these men had knowledge about causes, complications and treatments of hypertension but they did not believe that hypertension was serious, so did not seek treatment until they experienced severe symptoms and non-adherence to hypertension self-management. Long, Ponder, and Bernard (2017) also reported that African American men who had symptoms including dizziness, headache, and fatigue did not seek treatment until they were severe.

Perceived Risk and Adherence

Perceived risk of disease has been related to treatment adherence (Anderson et al., 2016; Cioe, Crawford, & Stein, 2014; Lee, 2018; Lee, Ayers, & Holden, 2016; Shreck, Gonzalez, Cohen, & Walker, 2013). Previous research which included both older men and women found that perceptions of risk for chronic heart disease contributed to healthier eating habits (Khayyal, Geneidy, & Shazly, 2016). Similarly, patients who reported being at risk for uncontrolled blood pressure adopted a healthier diet (Thongtang & Seesawang, 2014). Diabetes patients who perceived themselves to be at risk for sexual dysfunction and immobilization modified their
lifestyles in order to maintain normal blood glucose levels (Sachs et al., 2017). Lower perceived risk has been associated with poorer adherence to recommended health behaviors (Calvin et al., 2011; Darak et al., 2014; McKenzie & Skelly, 2010; Rouyard et al, 2017; Sahile, Yared, & Kaba, 2018) and perceived being at no risk for other problems led to no change in behavior (Bayrampour et al., 2012; Tilburt et al., 2011; Tonberg et al., 2015). Another study found that hypertensive patients perceived themselves at some risk but not sufficiently high to bring about very significant impact on adherence to treatment (Atulomah, Florence, & Oluwatosin, 2010).

**Medication Adherence**

Men living with hypertension often found medication adherence difficult, due to medication side effect, forgetting, and the substitution of prescription medications for folk remedies (Bennett, 2013). African American men reported discontinuing their medications because of severe side effects. Moreover, they frequently forgot to take their medications or skipped doses because it was inconvenient (e.g. the medication must be taken in the morning and the patient was usually away from home early morning). They described using folk remedies rather than medication from the doctors. They used folk remedies when they could not afford to fill their prescription and or if they had forgotten to fill their prescription. Another reason that made them use folk remedies was lack of trust in health care providers. This finding was supported by Elder et al. (2012), found that African American men with higher trust in the medical system were more likely to report better medication adherence. For lifestyle changes, Elbur (2015) found that older patients (age more than 65 years) were less adherent with medication compared to younger patients while patients suffering from other chronic diseases were found to be more adherent than patients living with hypertension alone. Individual’s
experience of living with diseases has been revealed to help in a number of ways with decisions about chronic illness management (Atulomah et al., 2010).

Learning about patient’s experience can inform appropriate healthcare provider actions throughout the illness trajectory. However, as far as we know, the experience of living with hypertension among men was not distinctly separated from women’s experience. Very few studies have explored the experience of men living with hypertension (Bennett, 2013; Long et al., 2017): it was found that an individual’s belief in the severity of hypertension has a greater influence than knowledge on treatment adherence. Nevertheless, this provides only a partial picture of living with hypertension. However, how men respond to the diagnosis, how they link hypertension knowledge to manage their hypertension, and how they integrate hypertension into their daily lives are missing from literature. Importantly, although previous studies in Thailand have documented that poor treatment adherence remains an important issue in rural older men with hypertension, nothing has been reported about the subjective experience of men living with hypertension in Thailand. Despite the one study describing the influence of beliefs and attitudes on medication adherence among urban men in developed countries (Bennett, 2013), the values of Thai culture are complex, and different from those of the West. Research in the West on beliefs, attitudes and how they affect hypertension may have limited transferability to rural Thailand. Furthermore, differences between the urban and rural contexts such as healthcare access and cultural beliefs limit the transferability of research to rural environments since differences in control of hypertension have been documented between rural and urban settings. Thus, there is a need to understand overall experience of older Thai men with hypertension.
Approach to the Problem

The purpose of this study is to increase our understanding of challenges to managing hypertension in rural, older Thai men. The majority (81.1%) of Thai older people living in rural areas have low levels of education (68%), and low incomes (80.5%) (Jitapunkul & Wivatvanit, 2009). Rurality in Thailand has also been associated with decreased awareness of hypertension, decreased treatment rates, and decreased levels of blood pressure control. Older rural men have been found to have lower levels of awareness (57%) compared to older urban men (69%), making them less likely to seek treatment than urban men (Aekplakorn et al., 2008). Lack of awareness only partially explained the lower likelihood of treatment for rural Thai men since rural men who were aware of their hypertension were still less likely to receive treatment with medication compared to their urban counterparts. Moreover, blood pressure control rates were lower among rural men than urban men (11% versus 17%) (Aekplakorn et al., 2008). These findings suggest a significant problem with hypertension management in rural Thai men.

Rural life in Thailand is simple. Lifestyles of older rural Thais are strongly influenced by Buddhism (Leelacharas et al., 2015). For example, older, rural Thais generally believe that illness is primarily the result of prior actions (karma) either in a past life or in the current life, often leading to an acceptance of their illness (Lundberg & Trakul, 2011; Sanseeha et al., 2009). Another study found that patients reporting high Buddhist values were more likely to comply with doctor visits and medication, as well as dietary recommendations (Sowattanangoon, Kochabhakdi, & Petrie, 2008). Moreover, Thais believe in supernatural influences; for example, they perceive illness as a result of fate, possibly making them less likely to see the value of medical treatment (Tanvatanakul et al., 2007). Patients performed health practices based on supernatural beliefs; for example, they had first treatment contact with religious/supernatural
treatment providers (Sanseeha et al., 2009) and patients with chronic illness were non-adherent with treatment (Tanvatanakul et al., 2007).

Thailand is a patriarchal society, with men as head of the family, responsible for supporting the family, and expected to show strength and leadership. Most men believe that being a good leader of the family means supporting the family financially and contributing to the family’s emotional, spiritual, physical and mental well-being (Romanow, 2012). In rural Thailand, older Thai men still work in agriculture, spending days in the fields and orchards. They have to work to earn money for their families, a high priority for them (Lundberg & Thrakul, 2011). However, we do not know how these cultural norms influence experience of living with hypertension. More importantly, many studies have not been conducted on Thai rural men with a prior hypertension diagnosis.

This literature review illustrates that individual experiences of living with chronic diseases is an important determinant of behavior change and adherence to treatment (Ferrer & Klein, 2015; Liu et al., 2015; Portnoy, Ferrer, Bergman, & Klein, 2014; Power et al., 2011; Simonds et al., 2017). However, research into the subjective personal experience of older men living with hypertension is scanty. The current study focuses on the major knowledge gap related to the subjective personal experience of older rural Thai men with hypertension. Therefore, the purpose of my dissertation study was to develop a conceptual model explaining older rural Thai men’s personal experience of living with hypertension. To gain a deeper insight into older rural Thai mens’ experiences, this study specifically aimed to explore their overall personal experience, what it means to live with hypertension, how older Thai men perceive their lives after receiving a hypertension diagnosis, how they respond to the diagnosis, and whether/how they manage and integrate hypertension into their everyday lives. The methodological approach
of grounded theory is used, as it allows deep understanding of social processes, while developing a based empirically theory, from the point of view of the actors (Charmaz, 2014). Men with hypertension are actors who give hypertension a meaning. It is possible to describe that meaning by accessing their symbolic universe (Corbin & Strauss, 2008). Knowledge generated from this study could provide understanding of older rural Thai men’s experiences, hopefully assisting health care providers to develop more effective strategies for improving care and achieving improved outcomes for rural Thai men.

The findings from this dissertation are reported in a 3-paper format. In the following section, I provide an outline of the 3-papers. The 3-paper dissertation provides a descriptive overview of the research/knowledge gap concerning older men with hypertension who live in rural areas and a possible solution to address the research gap.

**Overview of the Chapters**

The following three chapters provide detailed information regarding the experience of men with hypertension, information regarding factors influencing hypertension self-management among older adults with hypertension in Asian countries, and develop an understanding of personal experience of older rural Thai men with hypertension.

Chapter 2 provides an integrative review as it pertains to hypertension in men and identifies experience of men living with hypertension. The purposes were to provide an overview of what is known about experiences of men with hypertension across the world and identify implications for future research.

Chapter 3 gives a systematic review of qualitative research studies regarding factors influencing hypertension self-management among older adults with hypertension in Asian
countries. The aim was to systematically review and synthesize qualitative research of issues that influence self-management abilities of older adults living with hypertension in Asian countries.

In Chapter 4, I present findings from the grounded theory study which was designed to develop a conceptual model explaining experiences of older rural Thai men with hypertension. The findings from this study were informed by semi-structured, face-to-face interviews.

Chapters 2-4 are presented in the form of publications. Each chapter has been written to reflect the requirements of the journals to which the paper will be submitted. Chapter 2 was submitted to the Journal of Nursing Science. Chapter 3 will be submitted to International Journal of Nursing Practice. Chapter 4 will be submitted to International Nursing Review.

In Chapter 5, I summarize the findings from Chapters 2 to 4 and present implications for future research.
References


Chapter 2

Experiences of Men Living with Hypertension: An integrative Review
Title: Experiences of Men Living with Hypertension: An integrative Review

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Abstract

**Background:** Hypertension has become increasingly prevalent in developing countries, with men having higher rates than women of both hypertension and uncontrolled hypertension.

**Purpose:** To synthesize the evidence as it pertains to hypertension in men.

**Design:** An integrative literature review was conducted. This review included both qualitative and quantitative studies that focused on hypertension in men. A search for relevant literature published from 2007 to 2017 was undertaken using PubMed, CINAHL, Ovid MEDLINE, EBSCO, and ThaiJo databases and by examining relevant bibliographies. Seven studies formed the basis of this review. Findings from the identified research literature were analyzed and described using conventional content analysis.

**Main findings:** Five main categories emerged from the content analysis: (1) understanding symptoms of hypertension; (2) knowledge regarding consequences of hypertension; (3) level of adherence to a healthy lifestyle and medical treatment and influencing factors; (4) self-management; and (5) interventions that were designed to improve blood pressure control.

**Conclusion and recommendations:** Experiencing symptoms and viewing themselves as being at risk seem to be essential for males with hypertension to manage their condition. Future research should explore how males with hypertension develop a sense of risk, what factors can contribute to a sense of risk, and how the sense of risk motivates this unique population to change behavior.

**Keywords:** hypertension, men
Introduction

Hypertension is an extremely common and serious chronic disease among adults and older people aged 60 years or older (Angeli, Rebodi, & Verdecchia, 2013). Hypertension is a major risk factor for coronary heart disease, stroke, and chronic kidney disease (Saeed et al., 2011). Globally, hypertension is estimated to cause 7.5 million deaths as a consequence of severe complications and lack of adequate control (Angeli, Rebodi, & Verdecchia, 2013; Elbur, 2015). The worldwide prevalence of hypertension was 1.39 billion persons in 2010 (Ibrahim & Damasceno, 2012; Mills et al., 2016). The prevalence of hypertension increases with age and occurs more frequently in men than women (Gao et al., 2013; Helelo, Gelaw, & Adane, 2014).

Among hypertensive patients, men were less aware of their condition compared with women (Amaral et al., 2015; Rao et al., 2014; Son et al., 2012; Wang et al., 2014). Men also generally have lower rates of treatment and control than women (Abdul-Razak et al., 2016; Hussain et al., 2016; Muhamedhussein et al., 2016; Pereira, Lunet, Azevedo, & Barros, 2009; Pire, Sebastiao, Langa, & Nery, 2013). Poorly controlled hypertension makes male patients more susceptible than women to serious health outcomes, such as stroke (Kadir, Mohamed, & Yusof, 2009; Miller et al., 2016).

The greatest challenge to reducing these negative outcomes is poor treatment compliance, the most important cause of uncontrolled blood pressure, particularly among male hypertensive patients (Choi, Kim, & Kang, 2017; Kubo et al., 2015). Adherence to prescribed medication and following therapeutic lifestyle changes, such as salt restrictions, would reduce the incidence of patients with uncontrolled hypertension, resulting in reduced hypertension-related complications (Choi, Kim, & Kang, 2017). Previous studies reported that male patients exhibited lower adherence to hypertension treatment than female patients (Amaral et al., 2015; Hussain, Mamun,
Reid, & Huxley, 2016; Rao et al., 2014). Adherence with diet and medication has been reported to be lower among men than women (Amaral et al., 2015; Mills et al., 2016).

Despite the well documented risk, the low rate of blood pressure control and adherence with hypertension treatment among men is poorly understood. Decreasing uncontrolled hypertension and increasing adherence to treatment among men would have a direct impact on reducing the risk of stroke, cardiovascular disease, and kidney disease. This integrative literature review was conducted with the aim of investigating what is known about men’s experiences with hypertension.

**Design**

An integrative review was selected as it accommodates the synthesis of both qualitative and quantitative methodologies to be synthesized; ensuring the most comprehensive inclusion of sources related to patients’ experiences. The methodological steps for conducting this integrative review (Whittemore & Knafl, 2005) include: (1) identifying the focus and determining the aim of the review; (2) searching the literature; (3) evaluating the quality of the included literature; (4) analyzing data; and (5) presenting the findings (Table 1).

**Problem Identification**

While low rates of adherence to treatment and blood pressure control among men have been documented, there is less clarity about men’s experiences with hypertension in the world and whether the research on their experiences can inform us about contributing factors of treatment adherence.

**Literature Search**

Inclusion criteria for reviewed studies were: (i) recruited sample of male patients with hypertension; (ii) published in English or Thai language; (iii) published between 2007 and 2017 in
a peer-reviewed journal; and (iv) qualitative, quantitative and secondary analysis. Studies that pooled men and women were excluded unless they reported findings separately for men. Papers published prior to 2007, opinion papers, policy documents and best practice reports also were excluded.

A comprehensive literature search was conducted using PubMed, CINAHL, Ovid MEDLINE, EBSCO, and ThaiJO. A search of the literature using electronic databases was conducted using keyword combinations, including hypertension; high blood pressure; experience; and men. The reference lists of reviewed articles were also hand-searched.

After the initial search was performed, studies were screened for eligibility. The author and two research assistants independently screened the title and abstract of each study. The articles that did not meet the eligibility criteria were initially excluded according to their title or abstract. The full-text of studies that appeared to meet the inclusion criteria were obtained for further screening. The author and research assistants independently conducted preliminary screens of each article, and again determined which ones met the above inclusion criteria. Studies with any of the above exclusion criteria were removed. Next, the author and research assistants read the full-text of each study in detail. Both author and research assistants discussed discrepancies and came to a consensus on which studies should be included in the final count.

Data Evaluation

Four of the included studies used quantitative approaches and three used qualitative methodologies. The 7 articles were appraised for rigor, to provide final justification for their inclusion in the review. In this integrative review, the Critical Appraisal Skills (CASP) Program (CASP, 1997) was used to evaluate and critically appraise the articles. The CASP verifies trustworthiness and relevance of studies to the review being conducted by querying: is the
research valid?, what are the results?, and are the results useful? The CASP tools are free to download for public use. The CASP tools provide a comprehensive checklist to enable the author to assess the methodological quality of a paper and make a judgment about its suitability for inclusion in the review. The CASP checklist provided the questions and the guidance on how to assess both qualitative and quantitative studies. Thus, the author used question sets from the checklist based on methods used in studies. Nine questions that enabled appraisal of the rigor of the studies were used (Table 1), which were recorded as “✓ (yes)”, “✗ (no)” or “can’t tell” to the questions.

Data Analysis

Conventional content analysis was undertaken as Whittemore & Knafl (2005) have suggested that this strategy can be used for data analysis in integrative review. The author and research assistants first immersed themselves in the articles to obtain a sense of the whole, writing notes as we read through to indicate first impressions. Next, codes were developed that were reflective of the findings. Categories were developed by grouping codes, and organizing codes into meaningful clusters (Hsieh & Shannon, 2005). There was a high level of agreement among reviewers in terms of codes. The author then met with research assistants to discuss and resolve any disagreements, and final categories were determined.

Results

Search Outcome

The initial search identified 229 studies (Figure 1). After the initial search, 102 duplicates were removed. The titles and abstracts for the remaining 127 studies were screened. A total of 12 studies met the inclusion criteria. Next, 5 studies were excluded due to not meeting inclusion criteria for the following reasons: a) not separating men/women in the analysis (n = 2); b) lacking
mens’ perspectives (n 2); and c) being grey literature (n 1). Ultimately, 7 studies were
included in this integrative review.

Methodological Quality of the Studies

The methodological quality of qualitative studies was presented in Table 2. The qualitative
research designs were considered as appropriate to meet the purposes of the studies. However, the
researchers did not address researcher influence on data collection. The researchers failed to
explicitly detail strategies for self-reflection, an issue related to rigor during data collection and
analysis (Long, Ponder, & Bernard, 2017). A further example was hermeneutic phenomenology
(Bennett, 2013); a methodology that explicitly requires identification of pre-understandings, which
were not addressed in this study.

Shown in Table 2, the assessment of methodological quality of the quantitative studies
included sampling and sample size. The studies using quantitative research designs were deemed
acceptable for obtaining measurable data regarding adherence to treatment. However, small sample
sizes (Fort et al., 2015) and unstated estimates of precision (Elder, 2013; Dennison, 2007; Welsh,
Duff, Campbell-Taffe, & Lindo, 2015) (e.g. confidence intervals) resulted in uncertainty over the
strength of the findings and methodological quality in a number of the studies.

Overview of Studies

Details related to Aims, study sample, methods, major findings and limitations of the
seven studies reviewed are provided in Table 3. Four of the seven studies used quantitative
methods: cross-sectional (n 3) and randomized control trial (n 1). Three studies were
qualitative in nature, using the following study designs: unspecific qualitative approach (n 2)
and phenomenology (n 1). All studies focused on at least some portion of the experience of
men with hypertension. The sample sizes varied from 17 participants to 309 participants.
The national context can be seen in Table 3, four of the reviewed studies were conducted in the United States, with one study each from Saudi Arabia, Jamaica, and Mexico. Attempts to enhance credibility through investigating different settings were noted with most researchers studying more than one location. With regards to settings, all studies sampled men in urban settings. Impact of context was generally discussed in relatively simple, single factor terms such as; genetics, or country; position towards patient participation. Studies were lacking thick descriptions (Bennett, 2013; Elder et al., 2012; Long et al., 2017; Welsh et al., 2015) about the healthcare setting or cultural context. In term of samples, the participants across the studies ranged in age from 21 to 89 years, with the mean being 53.1 years. The included samples were African American, Jamaican, Saudi Arabia, and Mexican men.

**Detailed Results**

Five broad categories were discovered inductively in the data, namely ‘understanding the symptoms of hypertension’, ‘knowledge regarding consequences of hypertension’, ‘level of adherence to a healthy lifestyle and medication treatment and influencing factors’, ‘self-management’ and ‘interventions improving blood pressure control’. These are discussed in more detail in the following sections.

**Understanding the symptoms of hypertension**

Evidence in the literature suggests that headache and dizziness were reported as the main clinical manifestations of high blood pressure by men with hypertension. For example, most African American men with hypertension described the symptoms of hypertension including dizziness, headache, and fatigue (Bennett, 2013). Moreover, this study found that some participants sought care when those symptoms occurred while others with the same symptoms did not seek treatment until they were severe. Also, some African American men with
hypertension identified headaches and dizziness as the symptoms of hypertension (Long et al., 2017). Both studies (Bennett, 2013; Long et al., 2017) found that African American men were likely to determine when their blood pressure levels were elevated based on intermittent somatic symptoms such as headaches and dizziness. However, the studies did not provide information on the level of blood pressure readings among male patients.

**Knowledge regarding consequences of hypertension**

The reviewed studies suggested that, overall; most men with hypertension are knowledgeable about the consequences of their condition. One qualitative study (Bennett, 2013) found that African American participants were able to describe serious health consequences associated with hypertension, including myocardial infarction and potential for needing heart surgery. More recently, a qualitative study (Long et al., 2017) reported that 34 hypertensive, African American men in their sample were aware of the consequences of their condition, including the risk of heart attack, stroke, and death. The same study found that most men believed that hyperlipidemia was less serious than hypertension and lacked knowledge about the consequences of hyperlipidemia. Moreover, in a quantitative study of 48 Jamaican men with hypertension (Welsh et al., 2015), 93.7% understood that uncontrolled hypertension could lead to stroke or death.

**Level of adherence to a healthy lifestyle and medication treatment and influencing factors**

Studies from Saudi Arabia evaluated adherence to medications and lifestyle changes (e.g. dietary changes, smoking cessation) prescribed for hypertension by health care providers (Elbur, 2015) and in Jamaica (Welsh et al., 2015). Additional studies (Elbur, 2015; Welsh et al., 2015) measured level of adherence to therapeutic lifestyle changes including dietary changes (e.g.
Dietary Approaches to Stop Hypertension [DASH] diet), exercise, smoking cessation, limited alcohol consumption, and maintaining a healthy weight among male hypertensive patients. In the study by Welsh et al. (2015), only 20.1% of hypertensive Jamaican men reported adherence to exercise and 11.8% to a healthy diet. Moreover, 47.9% of Jamaican men with hypertension who attended an urban public health clinic reported adherence to maintaining a normal weight, and 29.2% to exercising; none of them used dietary approaches to manage their hypertension (e.g., DASH diet). However, 83.3% of patients were found to adhere to smoking cessation and 79.2% of patients were adhering to alcohol restriction. Also, the studies reported the level of adherence to medication treatment among male patients whose compliance rates ranged roughly from 14.6%–57.3% (Elbur, 2015; Welsh et al., 2015).

Moreover, one study of African American men assessed the relationships among trust in the medical system, medication adherence, and hypertension control, reporting that a higher trust in the medical system correlated with a greater likelihood of medication adherence (OR 1.06, 95% CI: 1.00 - 1.11) than those with lower trust (Elder et al., 2012). Another study (Elbur, 2013) found that older patients (age more than 65 years) were less adherent with healthy diet compared to younger patients. Comorbidity was a strong predictor of adherence with regular exercise, healthy diet, and medication among male hypertensive patients in Saudi Arabia. Overall, patients suffering from other chronic diseases were found to be more adherent than patients living with hypertension alone. Furthermore, Bennett (2013) found that the African American males who lived in Texas were less likely to have access to medical care, had lower levels of trust in providers, and more likely to experience severe side effects of medication leading to high rates of non-adherence to antihypertensive medications. In two reported studies, income level was a significant predictor of treatment adherence. In one study (Bennett, 2013) African American
males with low incomes were less likely to take medications due to financial difficulties, leading them to substitute home remedies. Furthermore, in one study (Elbur, 2015) of male hypertensive patients in Saudi Arabia, level of monthly income was the most important predictor of adherence to a healthy diet, linking diet adherence to financial barriers.

**Self-management**

Findings from the studies reviewed suggest that men with hypertension use a variety of strategies to manage their condition. In one qualitative study, most African American men with hypertension reported managing high blood pressure by using folk remedies, skipping, and stopping medications, and relying on spirituality and religion (Bennett, 2013). They stopped taking medications due to side effects. They reported unintentionally forgetting or skipping medication doses for reasons such as forgetfulness or their memory was a reason for forgetting, and not having a routine or job-related reasons. Some of them described using folk medicines such as garlic or lemon to reduce high blood pressure while others did not believe folk remedies were effective. They also described attending church services, listening to spiritual music, and meditation. Other researchers (Welsh et al., 2015) presented similar results from a group of Jamaican men with hypertension who reported taking alternative remedies such as garlic, lime juice, and hibiscus flowers along with their medication whereas others used alternative remedies as substitutes for their medications. Significantly, a healthy diet was not included in their lifestyle. Most Jamaican men (81.2%) reported that their meals were always prepared with salt. Only a third of the participants engaged in exercise. However, the majority described a low alcohol consumption and little current cigarette use.
Interventions improving blood pressure control

Evidence exists in the literature for the success of educational/behavioral interventions designed and implemented in hypertensive urban African American men. The researchers (Dennison et al., 2007) conducted a 5-year randomized control trial to test the effectiveness of educational/behavioral interventions among men aged 21 to 54 years composed of home visits, counseling, and comprehensive hypertension care by a nurse practitioner (NP)/community health worker (CHW)/physician (MD) team. Hypertensive urban African American men in the intervention group were more likely to improve adherence with hypertension self-care behavior and improve blood pressure control rates, leading to a reduction in some consequences of hypertension, including left ventricular hypertrophy and renal insufficiency in African American men.

A healthy lifestyle intervention was implemented among hypertensive men in urban parts of Mexico. The researchers interviewed 9 hypertensive men, 6 family members, and 9 healthcare providers in Mexico (Fort et al., 2015). The researchers found that most men highlighted pride and stubbornness as barriers for not participating in a healthy lifestyle intervention. They participated in intervention that was because their wife, son or daughter desired it, but not from their own desire. Getting older was an important barrier as most men believed they were too old to learn self-management skills. In addition, they were more likely to believe that routine physician checkups were sufficient, negating the need to participate in a dedicated hypertension intervention program.

Other barriers for not participating in intervention included conflicting work schedules, type of work, limited nurses, and mostly being female nurses. For example, some work schedules conflicted with the timing of the program while some types of work did not allow them to plan
when they would be working (e.g. contract or seasonal jobs). Men reported that they might be more likely to attend on weekends but nurses were more limited at that time. Importantly, having more female than male nurses was also a factor discouraging their participation since some men reported not being comfortable talking about their worries or problems with a female nurse.

**Discussion**

This integrated review set out to explore the published literature on the experience of men with hypertension in the world. There is currently little research on men with hypertension. The articles discussed in this review dealt with understanding symptoms of hypertension, knowledge regarding consequences of hypertension, adherence to a healthy lifestyle and medication treatment, self-management, and intervention improving blood pressure control.

In relation to content, the literature indicates that patients had knowledge about complications of hypertension which was related to self-management behavior and seeking health care (Bennett, 2013; Chythra, Kamath, Shetty, & Kamath, 2014; Kamran et al., 2014). Generally, men were more likely to perceive that seeking medical care was unnecessary as they believed that medical problems would improve on their own (Choi et al., 2017). Moreover, having a female nurse and not having enough nurses on weekends were reasons for not engaging in intervention. They started to seek health care or engaged in healthy lifestyle intervention when increasing the perceived severity of symptoms (Kadir, Mohamed, & Yusof, 2009; Pire, Sebastiao, Langa, & Nery, 2013). Regarding knowledge, the relationship between knowledge of hypertension and treatment adherence in these studies was not presented.

Hypertension is characterized by intermittent or absent symptoms. These studies indicated that presence of symptoms in some cases and symptom severity in other cases motivated men to seek treatment (Bennett, 2013; Long et al., 2017). However, research has not
provided any insight into how the perception to seek treatment without experiencing symptoms or what their reasons are for not using the knowledge that they have about complications.

The important problem, of course, is patient non-adherence to treatment. The majority of men do not follow healthcare recommendations. They are more likely to be adherent to hypertension therapies when they trust the medical system and healthcare providers, and/or have other comorbidities (Amaral et al., 2015; Wang et al., 2014). In addition, gender role perceptions can influence how men respond to their condition (Fort et al., 2015). Identifying mens’ position in society, as the breadwinner, helps us to understand that this gendered role could be competing with behaviors associated with engaging in healthy behavior and seeking help for their condition (Peterson, 2009; Robertson, 2006; Robertson, Sheikh, & Moore, 2010).

**Implications**

We have come a long way in men’s health care by promoting cardiovascular preventive health to men; however, there is now broader recognition of the need to study health-related problems specific to men (Elder et al., 2012). This review highlights a need for more research on gender-sensitive and specific hypertension management research and interventions. Identifying the gaps, like the lack of published research from developing countries that attempts to explore the experience of men living with hypertension, will help us to understand culture, perception, and behavior. These issues are necessary to design gender-specific and effective interventions to improve the health outcomes of male patients. Moreover, performing studies to address how knowledge of hypertension influences their hypertension management and treatment adherence in order to enhance patient adherence is recommended. It is a responsibility, as a nurse, to be aware of nursing care and engage in development strategies to support population hypertension control. The strategies that nurses have to develop should made by men, families, and healthcare providers to better reach men
and to involve family members both in a role to support patients, and also as a way to increase prevention efforts for those family members who do not already have a diagnosis.

**Strengths and Limitations of the Reviewed Studies**

The inclusion of only 7 research articles may be viewed as both a strength and weakness. Although only 7 studies were included, they were the most relevant and recently available in the English language for informing this literature review. Key limitations of the reviewed studies involved single locations, limited sample sizes, and rigor (give examples) of the selected studies that limited confidence and thus generalizability of the findings. While a number of the studies demonstrated these weaknesses, their inclusion in this literature review was warranted due to the limited research available in this field. As a result, cautious conclusions have been drawn from this review.

**Conclusion**

Men perceived hypertension as a disease with intermittent symptoms. This belief links to a delay in managing their condition until having the complications or they are already at risk for complications even though they know about consequences of hypertension. Hypertensive men are faced with external and internal barriers that result in poor adherence to hypertensive treatment, poor self-management, and low participation in hypertension interventions.

These findings indicate a need for further research to understand hypertension-related experiences of men related to their sense of risk. Exploring men’s experiences of living with hypertension through a masculine lens will illuminate how individual men experience common cultural themes. Moreover, missing from the literature is a description of how men successfully negotiate hypertension management within their daily lives. Giving voice to men’s experiences of living with hypertension will provide the basis for new strategies that promote treatment
adherence and health behavior for hypertension management within male populations. Hypertension interventions that are tailored to treatment adherence, concerns and needs of men, their families, and communities could increase treatment adherence levels and blood pressure control rates.

Acknowledgments

The author acknowledges Dr. Barbara Bowers for providing helpful feedback on this paper and the financial support received from 2017 Eckburg Fund Research Award by the University of Wisconsin-Madison School of Nursing.
References


Bennett, J. (2013). Beliefs and attitudes about medication adherence in African American men with high blood pressure. *Academy of Medical-Surgical Nurses, 22*(3), 4-10.


Table 1

*Integrative review process*

<table>
<thead>
<tr>
<th>Stage</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem identification</td>
<td>What is known about men’s experiences of hypertension?</td>
</tr>
<tr>
<td>Literature search</td>
<td>Electronic databases searched: PubMed, CINAHL, Ovid MEDLINE, EBSCO, and ThaiJo</td>
</tr>
<tr>
<td>Data evaluation</td>
<td>Relevant CASP critical appraisal tool applied</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Qualitative content analysis to develop categories</td>
</tr>
<tr>
<td>Presentation (results)</td>
<td>Understanding the symptoms of hypertension</td>
</tr>
<tr>
<td></td>
<td>Knowledge regarding consequences of hypertension</td>
</tr>
<tr>
<td></td>
<td>Adherence to a healthy lifestyle and medication treatment and influencing factors</td>
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<tr>
<td></td>
<td>Self-management</td>
</tr>
<tr>
<td></td>
<td>Interventions improving blood pressure control</td>
</tr>
</tbody>
</table>
Table 2

*Summary of critical appraisal*

<table>
<thead>
<tr>
<th>Checklist questions</th>
<th>Study 1 Bennett(^{18})</th>
<th>Study 2 Dennison et al.(^{22})</th>
<th>Study 3 Elbur et al.(^{23})</th>
<th>Study 4 Elder et al.(^{20})</th>
<th>Study 5 Fort et al.(^{19})</th>
<th>Study 6 Long et al.(^{17})</th>
<th>Study 7 Welsh (^{21})</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the chosen research method/methodology appropriate for addressing the aims of the study?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Is the achieved sample size sufficient for the study aims and to warrant conclusions drawn?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Are the chosen data collection strategies appropriate for the research question?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4. How adequate is the description of the data analysis?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5. Is there comprehensive evidence that ethical issues have been taken into consideration?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6. Does the study clearly demonstrate external and internal validity/ rigour?</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7. Is there a clear statement of the study findings?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8. Are the limitations or weaknesses of the study acknowledged?</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>9. Is the research valuable (makes valuable contribution/addresses clinical implications)?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Table 3

**Summary of reviewed studies**

<table>
<thead>
<tr>
<th>Study</th>
<th>Purpose</th>
<th>Sample, setting</th>
<th>Research design/analysis</th>
<th>Major result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bennett18</td>
<td>To explore beliefs and attitudes that influenced medication adherence in African American men</td>
<td>USA - 17 males: Aged over 45 years; Setting: hospital in a city of Texas</td>
<td>Hermeneutic/phenomenological-Narrative analysis</td>
<td>The data revealed 3 primary themes: 1. Feeling no symptoms: it can’t be serious because I feel okay, ignoring or failing to recognize symptoms. 2. Becoming aware of serious complications: heading for something bad, opening up communication with loved ones, watching loved ones die, taking responsibility for my health. 3. Managing HT: affording medicines when I’m poor, tiding myself over until I get my medicine, forgetting, skipping and stopping (severe side effect), and coping with spirituality and religion.</td>
</tr>
<tr>
<td>Dennison, et al. 22</td>
<td>To describe changes in hypertension care utilization, behavioral factors, and physiologic outcomes, and mortality among hypertensive African American men</td>
<td>USA - 309 hypertensive African American men: Aged 21-54 years; Setting: Randomized clinical trial (Educational/behavioral intervention by nurse practitioner, community health worker, and physician)</td>
<td>Randomized clinical trial (Educational/behavioral intervention by nurse practitioner, community health worker, and physician)</td>
<td>The annual proportion of men with controlled BP ranged from 17% to 44% in the more intensive group and 21% to 36% in the less intensive group. At 5 years the more intensive group had less LVH than the intensive group and 17% of them were decreased primarily due to narcotic or alcohol intoxication (36%) and cardiovascular causes (19%).</td>
</tr>
<tr>
<td>Study</td>
<td>Purpose</td>
<td>Sample, setting</td>
<td>Research design/analysis</td>
<td>Major result</td>
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</tr>
<tr>
<td>Elbur, et al.²³</td>
<td>Measure adherence to diet, exercise and ...</td>
<td>- 144 patients from hospitals age &lt;65 - &gt;65</td>
<td>- A cross-sectional study</td>
<td>Rates of adherence to exercise, a healthy diet, and medications were 20.1%, 11.8%, and 34.7% respectively. The level of monthly income was found to be strongly associated with adherence to both a healthy diet. Patients aged 65 years were found to be more adherent to a healthy diet, comparing to elderly ones. Only 4.2% (6 patients) were found to be adherent to all studied domains. Adherence to all domains increased significantly with educational level.</td>
</tr>
<tr>
<td>Elder, et al.²⁰</td>
<td>To assess the relationship between trust in ...</td>
<td>- 235 men with HT - More than 80% of the men were aged 45</td>
<td>- A cross-sectional study</td>
<td>African American men with higher general trust in the medical system were more likely to report better medication adherence (odds ratio [OR] 1.06), and those with higher self-efficacy were more likely to report better medication adherence and hypertension control.</td>
</tr>
<tr>
<td>Study</td>
<td>Purpose</td>
<td>Sample, setting</td>
<td>Research design/analysis</td>
<td>Major result</td>
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<tr>
<td>Fort, et al.(^1)(^9)</td>
<td>To identify barriers and strategies to involve men and engage family members in disease management and risk reduction</td>
<td>- 9 men with HT and/or diabetes, 6 families, 9 health care providers</td>
<td>- A qualitative study with semi-structured interviews</td>
<td>- Internal and external factors which influence men to make a decision to take part in the activities: time, gender roles, age, perception of chronic condition, work, and healthcare services and staffs. - Families relationships with disease: different roles, within the family and types of support.</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td>- Thematic analysis</td>
<td></td>
</tr>
<tr>
<td>Long, et al.(^1)(^7)</td>
<td>To explore knowledge, attitudes, and beliefs regarding hypertension and hyperlipidemia management</td>
<td>- 34 African-American men with HT and/or hyperlipidemia, - Aged 40-65 years</td>
<td>- Focus groups - Content analysis</td>
<td>- Patients had a high level of knowledge about hypertension self-management, but less about cholesterol self-management. - Barriers to self-management included medication side effects and unhealthy dietary patterns. Facilitators included social support, positive healthcare experiences and the value placed on family. Cultural implications highlighted the importance of food in daily life and social settings. Notions of masculinity affected self-management such as feeling less athletic and less in control of their bodies because of their</td>
</tr>
<tr>
<td>Study</td>
<td>Purpose</td>
<td>Sample, setting</td>
<td>Research design/analysis</td>
<td>Major result</td>
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<tr>
<td>Welsh, et al.²¹</td>
<td>To determine the extent to which the lifestyles of Jamaican men with hypertension met the JNC7 guidelines in Jamaica</td>
<td>- 48 men with HT at a health center in Jamaica - Aged 35-89 years (mean 65.2)</td>
<td>- Descriptive statistics design</td>
<td>Diagnosis and medication use affected their sexual functioning. Men with 33% having blood pressure controlled to 130/80 mmHg. The number of men who met the guidelines were normal weight 23 (47.9%), DASH diet zero, medication 7 (14.6%), exercise 14 (29.2%), alcohol restriction 38 (79.2%), and smoking cessation 40 (83.3%).</td>
</tr>
</tbody>
</table>

Note: BP, Blood Pressure; DASH, Dietary Approaches to Stop Hypertension; HT, Hypertension; LVH, Left Ventricular Hypertrophy
Figure 1 Flowchart of the Study Selection Process
Chapter 3
Factors Influencing Ability to Self-Manage Hypertension among Older Adults in Asian Countries: A Systematic Review of Qualitative Studies
Title: Factors Influencing Ability to Self-Manage Hypertension among Older Adults in Asian Countries: A Systematic Review of Qualitative Studies

Intended to submit to: International Journal of Nursing Practice

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Abstract

Background: Hypertension is one of the most common chronic conditions among older adults in Asian countries and is associated with high morbidity and mortality. Reducing morbidity and mortality would require individual patients to engage in effective self-management strategies. Understanding the process involved in and the factors affecting ability to self-manage is fundamental to decreasing the complications of this long-term condition.

Aim: Present a systematic review and synthesis of qualitative research related to factors influencing self-management abilities of older adults living with hypertension in Asian countries.

Methods: A qualitative systematic review was performed. An electronic search from databases was conducted. Conventional content analysis was used to analyze and synthesize findings from qualitative studies.

Results: Ten qualitative studies are included in this review. Findings cover the factors found to influence self-management among older adults in Asian countries including: a) patient-level influences and hypertension self-management, b) organizational-level influences and hypertension self-management, and c) community-level influences and hypertension self-management, and the facilitators and barriers within each of these categories.

Conclusion: Understanding factors that influence hypertension self-management may improve assessment of self-management among older adults with hypertension in Asian countries and also may inform intervention development to individual’s needs and to improve self-management behaviors and health outcomes among older adults in Asian countries.

Keywords: hypertension, older adults, self-management
Introduction

Hypertension is very common among older adults in many Asian countries (Cheung & Cheung, 2012; Jin et al., 2013). For example, the prevalence of hypertension in Chinese older adults (aged ≥ 65 years) is 66.18% compared to 44.02% of middle-aged (aged ≥ 45 years) (You et al., 2018). The prevalence of hypertension and uncontrolled hypertension contribute to the present pandemic of morbidity and disability, mortality, high economic costs, and loss of quality of life for patients and families (Briasoulis et al., 2014; Cheong et al., 2015; Lee et al., 2011; Malhotra et al., 2010; Park, Kario, & Wang, 2015; Seijak et al., 2013). The success of hypertension management depends on the patient’s ability to perform hypertension self-management which involves a complex and multifactorial process (Flynn et al., 2013).

Hypertension self-management has been identified as a critical component in hypertension management (Flynn et al., 2013). 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 diet, exercise, limiting alcohol consumption, and tobacco cessation (Glynn et al., 2010). Preventing the serious complications of hypertension requires patients to incorporate these lifestyle changes into their daily routines along with a high level of adherence (Eugene & Bourne, 2013; Hallberg, Ranerup, & Kjellgren, 2016; Kaambwa et al., 2014; Motlagh et al., 2016; Zimbudzi et al., 2015).

Previous studies documented that hypertension self-management is suboptimal among older adults with hypertension in Asian countries. High levels of poor adherence to hypertension self-management such as dietary changes and blood pressure self-monitoring have been reported in this population (Jin et al., 2013; Lee & Park, 2017; Thongtang & Seesawang, 2018; Tu et al., 2018). Moreover, most of them did not adhere to medication regimen; for example, they
purposely skipped or forgot medications (Thongtang & Seesawang, 2018). The reasons for this are not well understood, 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 in Asian older adults (Hu, Li, & Arao, 2014; Irwan et al., 2016; Motlagh et al., 2016; Shima, Farizah, & Majid, 2014; Truong, Jullamate, & Piphatvanitcha, 2013). However, there is a lack of knowledge about how these factors influence self-management as experienced by older adults in Asian countries, and how these factors operate in the daily lives of older adults in Asian countries. To answer these questions regarding personal experience of the factors affecting hypertension self-management in their everyday lives, qualitative research is the most appropriate method (Butler, Hall, & Copnell, 2016). Qualitative research can help researchers to better understand older adults’ experiences in Asian countries that contribute to their ability to self-manage hypertension.

To address these gaps in knowledge, it is important to capture and synthesize how older adults in Asian countries experienced the factors that influenced their self-management behavior, which can only be done with qualitative methods. Consequently, this paper reports on a systematic review of qualitative research (Butler et al., 2016) focusing on experiences affecting hypertension self-management in older adults within Asian countries. We synthesized our knowledge about the factors influencing hypertension self-management by applying a systematic review of qualitative research to: i) broaden the clinical communities’ understanding of patients’ needs to achieve hypertension control, ii) how we can more effectively support hypertension self-management, and iii) develop tailored self-management interventions for older adults with hypertension in Asian countries.
Aim

This systematic review was undertaken to synthesize qualitative research evidence on factors influencing older adults’ ability to self-manage hypertension in Asian countries.

Methods

Design

This systematic literature review and synthesis of qualitative studies was conducted using the method proposed by Butler et al. (2016). This method was developed to guide researchers conducting qualitative systematic reviews that aim to present a comprehensive understanding of individual experiences and perceptions, rather than to evaluate the effectiveness of an intervention (Butler et al., 2016).

Eligibility Criteria

Based on Butler’s methodology (Butler et al., 2016), the author set inclusion criteria for studies. All searches were restricted by (see Table 1): period of publication (2008-2018) to ensure the review examined current knowledge of the individual with hypertension, language (English), type of journal (academic or peer-reviewed), research subject (human), and age (60 years or older).

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’, and ‘qualitative research’. The literature search was undertaken between June 2018 and August 2018.
Search Outcome

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009) were 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; 419 duplicates were subsequently removed. The author and a research assistant 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 (n = 645) or were quantitative studies (n = 406) which cannot answer or address knowledge gap about older adults in Asian countries’ experience of factors influencing hypertension self-management. Forty studies met inclusion criteria and were reviewed in full. Next, during the preliminary review of the 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) lacking focus on self-management (n = 10); and c) being grey literature which was composed of knowledge artifacts that are not the product of peer-review processes characterizing publication in scientific journals (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).

Study Selection

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

**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; and i) findings relevant to the review. The author and research assistant entered this information into a table to allow for comparison across articles (Table 2).

**Quality Appraisal**

The author and research assistant reviewed and critiqued the quality of each study using the QualSyst Tool for Qualitative Studies (Kmet, Lee, & Cok, 2004). 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 0.55 (Kmet et al., 2004) were not included. The cut-point of 0.55 is
the minimum recommended threshold for inclusion for qualitative studies (Kmet et al., 2004). 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 primarily i) a lack of a clear description of analysis and ii) limited contextual information about participants.

Data Synthesis

Data synthesis was performed using conventional content analysis, an approach that is particularly appropriate when little is known about a phenomenon (Hsieh & Shannon, 2005) and this method is consistent with Butler’s guideline. The authors initially read and immersed themselves in the manuscripts to obtain a sense of the whole and recorded first impressions. Next, codes reflecting categories and concepts reported in the ten studies were developed. Categories were inductively developed by grouping codes based on similarities and differences, and organizing codes into meaningful clusters (Erlingsson & Brysiewicz, 2017; Hsieh & Shannon, 2005). For instance, category “patient-level influence” demonstrated factors at individual levels that influenced hypertension self-management. Table 4 provides coding and synthesized categories.

Results

Overview of 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 older adults with hypertension in Asian countries. In each of the included studies, Asian older adults were interviewed using open-ended questions such as “how do 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, no studies contributed to all categories. The most common categories addressed were patient-level influences, organizational-level influences and community-level influences on hypertension self-management as identified in the ten studies (Table 5).

**Patient-level influences and hypertension self-management.** Patient level influences were associated with individual lifestyle and beliefs that affected their ability to self-manage. Sub-categories included ‘personal beliefs’, ‘understanding of symptoms’, ‘perceptions of physical health’, ‘sense of responsibility’, ‘sense of control,’ and ‘financial concerns’.

**Personal beliefs.** Three studies contributed to the cultural, social and spiritual beliefs that influenced hypertension self-management. One study in Thailand, identified that most older adults diagnosed with hypertension, expressed a belief that the imbalance between Leard (blood) and Lom (wind) caused hypertension, and was related to inappropriate behavior such as having hot and cold body temperature (Udompittayason et al., 2012). They believed that exposure to
extreme weather (cold or hot weather) caused the imbalanced circulation. Moreover, cultural belief led most of them to use traditional medicines as they believed that traditional medicines can improve the imbalance of circulation. These behaviors were not consistent with hypertension management recommendations. Another study by Nayeri et al. (2015) found that some older adults with hypertension in Iran commonly 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 were likely to believe that the outcome of hypertension was in ‘God’s hands’ and their body was a loan from God (Nayeri et al., 2015). Thus, the idea of self-management, of personal control, was not an option to them.

Studies in Thailand and Iran (Nayeri et al., 2015; Woodham et al., 2018) found that some older adults did not engage in self-management behavior because they believed that western medications had more problems than benefits and that taking medications would cause other serious health problems. Thus, they decided not to take medications to decrease their high blood pressure.

**Understanding of symptoms.** The studies of Udompittayason et al. (2012) and Woodham et al. (2018) in Thailand, reported that older adults with hypertension were more likely to stop medication and decided not to change their lifestyle behaviors because they had no symptoms. They only took hypertension medication when experiencing clinical symptoms such as headache or dizziness because they did associate this with hypertension (Udompittayason et al., 2012). Similarly, older adults with no symptoms were more likely to believe that there was no reason to continue taking medication, change their lifestyle, or adopt preventive behaviors such as exercise
(Woodham et al., 2018). This was the difference in initiation versus maintenance of hypertension-related behavior.

**Perceptions of physical health.** One study conducted in Thailand found that perceptions of poor physical health interfered with motivation to make changes related to hypertension management (Sutipan & Intarakamhang, 2017). Hypertensive older adults who perceived their physical health to be poor were less likely than others to engage in physical activities. They perceived their physical health to be poor when they cannot work as usual or when they had muscle pain or fatigue. Perceptions of poor physical health made them want to stay at home, to engage only in sedentary activities, and not exercise.

**Sense of responsibility.** Findings from the Zhang et al. (2014) study in China, suggested that older adults with hypertension 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. In addition to feeling responsible for themselves, they believed that taking care of themselves would prevent them from adding burden to their country.

Other studies in Thailand (Kitreerawutiwo et al., 2015) and China (Long & Li, 2016) found that some older adults with hypertension 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 responsibilities, especially older men. This was the explanation some older adults gave for failing to take medications.

**Sense of control.** In a study by Khezri et al. (2016) among Iranian older adults, an individual sense of control over their illness was associated with greater trust in their ability to successfully engage in self-management behavior, compared to those with a poor sense of
control over their illness. Those with greater sense of control were also more likely to have stronger confidence in their ability to manage their hypertension.

**Financial concern.** One study in China (Long & Li, 2016) reported financial concerns, as a factor influencing the ability to self-manage hypertension. Insufficient income limited older adults’ ability to purchase healthy food, medications, and transportation to healthcare provider appointments, especially among older adults who lived in rural areas.

**Organizational-level influences and hypertension self-management.** Only two studies addressed organizational-level issues including provider time management and healthcare provider-patient communication as factors influencing an individual’s hypertension self-management ability (Kang et al., 2014; Khezri et al., 2016).

**Provider time management.** One study conducted in Iran (Nayeri et al., 2015) found that many older adults with hypertension experienced insufficient time to consult with providers about their concerns due to short visits (Nayeri et al., 2015). Thus, they reported rarely having a chance to discuss or learn about self-management strategies to support home blood pressure management.

**Healthcare-provider communication.** One study conducted in South Korea (Kang et al., 2014) found that older adults with hypertension reported receiving inadequate attention from healthcare providers. Some of them perceived that doctors did not listen to them. Sometimes, they experienced lack of response when talking about having difficulty with self-management. Moreover, they reported that their doctors did not discuss some hypertension lifestyle management strategies such as regular exercise; but only mentioned avoiding salty food, taking medications.
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 in Thailand (Sutipan & Intarakamhang, 2017) reported inadequate community resources affecting self-management among some 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.

Social support. Three studies conducted in Thailand (Kitreerawutiwo et al., 2015; Sutipan & Intarakamhang, 2017; Thongtang & Seesawang, 2018) and one study conducted in Iran (Nayeri et al., 2015) found that social support influenced self-management. 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 (Nayeri et al., 2015; Sutipan & Intarakamhang, 2017; Thongtang & Seesawang, 2018). 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 (Kitreerawutiwo et al., 2015).

Discussion

The purpose of this systematic review was to synthesize evidence on the issues found to influence ability of older adults in Asian countries 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. personal belief, perceptions of symptoms and sense of responsibilities), organizational-level influences (e.g. time management), and community-level influences (e.g. social support) can influence ability to self-manage among older adults with hypertension in Asian countries.

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 (Disler, Gallagher, & Davidson, 2012) and in adult patients with diabetes (Wilkinson, Whitehead, & Ritchie, 2014) that have been reported by others. For example, an integrative review of factors influencing self-management of chronic obstructive pulmonary disease showed that the 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 (Disler et al., 2012).

However, 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 (Wilkinson et al., 2014). 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 (Luo et al., 2015).

Personal beliefs are an important influence on individual’s ability to self-manage their hypertension which is congruent with other studies. In a qualitative study of self-manage in
diabetes, Reyes et al. (2017) documented the influence of personal beliefs on eating behavior changes and taking medication as prescribed. Those 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, Mosnier-Pudar et al. (2010) reported that patients who believed that playing an active role in their own care could alter the disease course were more able to maintain lifestyle changes while those who believed that family history and genetics were the only causes of diabetes were unlikely to take an active role in their disease management. Korpershoek et al. (2016) found that patients who believed their symptoms would resolve on their own postponed appointments with their healthcare providers.

Social support also played an important role in hypertension self-management. In this review, social support from family and peers was reported to improve hypertension self-management behavior that was consistent with other illnesses such as diabetes and chronic obstructive pulmonary disease (Disler et al., 2012; Wilkinson et al., 2014). Social support can promote patients to engage in healthy diet, physical activities, and decision to contact healthcare providers (Irwan et al., 2016; Korpershoek et al., 2016; Motlagh et al., 2016). Pertaining to support from healthcare providers, this review found that older adults with hypertension often experienced what they viewed as 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. Moreover, research approach for data collection, the researchers tended to ask open-ended questions that focused on barriers and facilitators to self-management. However, the researcher did not ask questions on how older dealt with all obstacles to self-manage.

To provide a foundation for research on factors influencing ability to self-manage, this review took a broad perspective among older adults in Asian countries. Nevertheless, this systematic review does not provide a complete profile of what may help or impede self-management in hypertension. Moreover, our sample included older adults with other chronic diseases 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.

**Implications for Practice, Policy, and Research**

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.

Future research in the area of self-management should focus on identifying and targeting factors that increase risk of poor self-management practices. In addition, future research and intervention studies should focus on how best to tailor interventions to improve self-management and evaluate the short- and long-term outcomes of interventions.

**Conclusion**

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 evidence 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 older adults living with hypertension in Asian countries. 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 older adults with hypertension in Asian countries, future studies should attempt replication among those with different backgrounds.
References


Figure 1 Flow diagram of included studies through review process

- Records identified through database searching (n = 1,510)
- Additional records identified through other sources (n = 2)
- Records after duplicates removed (n = 1,091)
- Records screened (n = 1,091)
- Records excluded (n = 1,051)
- Full-text articles assessed for eligibility (n = 40)
- Studies included in qualitative synthesis (n = 10)

Full-text articles excluded, with reasons (n = 30)
1. Quantitative study: 8
2. Lacks focus on self-management: 10
3. Grey literature: 12
Table 1

*Inclusion and exclusion criteria*

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relates to the factors influencing hypertension self-management of older adults aged more than 60 years in a rural and urban setting in Asian countries</td>
<td>Self-management is required for older adults with hypertension who live in both urban and rural areas in Asian countries. Any studies which focused on hypertension self-management in older adults outside Asian countries were excluded, because of the difference in the context.</td>
</tr>
<tr>
<td>Examines older adult experiences, perspectives, attitude or feelings as a primary aim</td>
<td>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.</td>
</tr>
<tr>
<td>Original qualitative data</td>
<td>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.</td>
</tr>
<tr>
<td>Author, Year, County</td>
<td>Study Design</td>
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<tr>
<td>Udompittayason et al. (2012)</td>
<td>Ethnographic study</td>
</tr>
<tr>
<td>Sutipan and Intarakhamang (2017)</td>
<td>Qualitative focus group study</td>
</tr>
<tr>
<td>Author, Year, County</td>
<td>Study Design</td>
</tr>
<tr>
<td>----------------------</td>
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<tr>
<td>Thongtang and Seesawang (2018) Thailand</td>
<td>Convention analysis approach</td>
</tr>
<tr>
<td>Woodham et al. (2018) Thailand</td>
<td>Directed content analysis approach</td>
</tr>
<tr>
<td>Author, Year, County</td>
<td>Study Design</td>
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<tr>
<td>----------------------</td>
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</tr>
<tr>
<td>Kitreerawut iwo et al. (2015) Thailand</td>
<td>Qualitative approach using in-depth interviews and focus group</td>
</tr>
<tr>
<td>Zhang et al. (2014) China</td>
<td>A qualitative descriptive design</td>
</tr>
<tr>
<td>Author, Year, County</td>
<td>Study Design</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Long and Li (2016) China</td>
<td>A qualitative narrative design</td>
</tr>
</tbody>
</table>
| Nayeri et al. (2015) Iran | Convention al content analysis approach | Explore patients, their families, and healthcare | 10 patients F 5, M 5 | Data collection: semi-structured interview | Patients had a negative attitude toward the disease, treatment, doctor, and medication, for example, they believed that their body ...
<table>
<thead>
<tr>
<th>Author, Year, County</th>
<th>Study Design</th>
<th>Purpose</th>
<th>Participants/ Setting</th>
<th>Data Collection/ Data Analysis</th>
<th>Findings relevant to factor influencing self-manage providers’ experiences about hypertension treatment adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>analysis: conventional content analysis</td>
<td>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. Patients found that it was difficult to resist when their relatives or friend offer them unhealthy food. 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</td>
</tr>
<tr>
<td>Author, Year, County</td>
<td>Study Design</td>
<td>Purpose</td>
<td>Participants/ Setting</td>
<td>Data Collection/ Data Analysis</td>
<td>Findings relevant to factor influencing self-management physician.</td>
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<tr>
<td>Khezri et al. (2016) Iran</td>
<td>Directed content analysis approach</td>
<td>Explore the challenges in self-management empowerment</td>
<td>9 hypertension patients Urban areas</td>
<td>Data collection: semi-structured interviews Data analysis: directed content analysis</td>
<td>Patients perceived that even they were old; they were able to control their disease by complying with medication regimen and exercising.</td>
</tr>
<tr>
<td>Kang et al. (2014) South Korea</td>
<td>A qualitative narrative design</td>
<td>Explore how older Korean adults perceive and cope with their chronic illness</td>
<td>13 participants Urban areas</td>
<td>Data collection: focus group Data analysis: content analysis</td>
<td>Patients experienced not being heard or considered by doctors.</td>
</tr>
</tbody>
</table>
Table 3

*Quality assessment for qualitative studies with QualSyst Tool*

<table>
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<tr>
<th>Studies</th>
<th>Quality Assessment Criteria for Qualitative Studies</th>
<th>Total Score</th>
<th>Summary Score</th>
</tr>
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<tbody>
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<td></td>
<td>1. Question / objective sufficiently described?</td>
<td>2 2 2 1 2 2 2 2 2 2</td>
<td>19</td>
</tr>
<tr>
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<td>Study design evident and appropriate?</td>
<td>2 2 1 2 2 2 2 0 2 1</td>
<td>16</td>
</tr>
<tr>
<td>(2012)</td>
<td>Context for the study clear?</td>
<td>2 2 2 2 2 2 1 2 2 1</td>
<td>18</td>
</tr>
<tr>
<td>2. Sutipan</td>
<td>Connection to a theoretical framework / wider body</td>
<td>2 2 2 2 2 2 1 1 2 2</td>
<td>17</td>
</tr>
<tr>
<td>(2017)</td>
<td>of knowledge?</td>
<td>2 2 2 2 2 2 1 1 1 1</td>
<td>14</td>
</tr>
<tr>
<td>3. Thongtang</td>
<td>Sampling strategy described, relevant and justified?</td>
<td>2 2 2 2 2 2 2 2 2 1</td>
<td>19</td>
</tr>
<tr>
<td>(2018)</td>
<td>Data collection methods clearly described and</td>
<td>2 2 2 2 2 2 2 0 2 1</td>
<td>17</td>
</tr>
<tr>
<td>4. Woodham</td>
<td>systematic?</td>
<td>2 2 2 2 2 2 1 2 2 1</td>
<td>16</td>
</tr>
<tr>
<td>(2018)</td>
<td>Data analysis clearly described and systematic?</td>
<td>2 2 1 2 2 2 1 2 2 1</td>
<td>14</td>
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<tr>
<td>5. Kitreerawutiwo</td>
<td>Use of verification procedure(s) to establish</td>
<td>2 2 2 2 2 2 2 2 2 1</td>
<td>19</td>
</tr>
<tr>
<td>(2015)</td>
<td>credibility?</td>
<td>2 2 2 2 2 2 2 0 2 0</td>
<td>14</td>
</tr>
<tr>
<td>6. Zhang</td>
<td>Conclusions supported by the results?</td>
<td>2 2 1 2 2 2 1 2 2 1</td>
<td>16</td>
</tr>
<tr>
<td>(2014)</td>
<td>Reflexivity of the account?</td>
<td>2 2 1 2 2 2 1 0 2 0</td>
<td>14</td>
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<tr>
<td>7. Long</td>
<td></td>
<td>2 2 2 2 2 2 2 2 2 1</td>
<td>19</td>
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<tr>
<td>(2016)</td>
<td></td>
<td>2 2 2 2 2 2 2 0 2 1</td>
<td>17</td>
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<td>8. Nayeri</td>
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<td>2 2 2 2 2 2 2 2 2 1</td>
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<td>(2015)</td>
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<td>2 2 2 2 2 2 2 1 0 2</td>
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<tr>
<td>9. Khezri</td>
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<td>10 Kang</td>
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<td>(2014)</td>
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*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)
Table 4

*Categories of factors affecting self-management and associated codes*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-categories</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient-level influences on hypertension self-management</td>
<td>Personal beliefs</td>
<td>• Perception of cause of hypertension</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Self-manage is inconvenient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cultural belief/value/practice (e.g. food and traditional medicine)</td>
</tr>
<tr>
<td>Understanding of symptoms</td>
<td></td>
<td>• Spiritual belief in God</td>
</tr>
<tr>
<td>Perceptions of physical health</td>
<td></td>
<td>• Negative attitude towards Western medicine (e.g. adverse effect)</td>
</tr>
<tr>
<td>Sense of responsibility</td>
<td></td>
<td>• Appearance of symptoms</td>
</tr>
<tr>
<td>Sense of control</td>
<td></td>
<td>• Absence of symptoms</td>
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<tr>
<td>Financial concerns</td>
<td></td>
<td>• Perceptions of poor physical health</td>
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<tr>
<td></td>
<td></td>
<td>• The responsibility of the healthy</td>
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<td></td>
<td></td>
<td>• Focusing on family work</td>
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<td></td>
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<td>• Time constraints of family work affect time to self-manage</td>
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<td></td>
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<td>• Self-perceived control of own health</td>
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<td></td>
<td></td>
<td>• Insufficient income to self-manage (e.g. buying healthy food)</td>
</tr>
<tr>
<td>Categories</td>
<td>Sub-categories</td>
<td>Codes</td>
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<td>-------------------------------------------</td>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Organizational-level influences on hypertension self-management</td>
<td>Provider time management</td>
<td>• Lack of time for consultation</td>
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<tr>
<td></td>
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<td>• Longer waiting time</td>
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<td></td>
<td></td>
<td>• Lack of active discussion</td>
</tr>
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<td></td>
<td>Healthcare provider-patient communication</td>
<td>• Perceive doctors do not listen to patients</td>
</tr>
<tr>
<td>Community-level influences on hypertension self-management</td>
<td>Community resources</td>
<td>• Exercise environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of public place for exercise</td>
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<tr>
<td></td>
<td>Social support</td>
<td>• Perceived support (family, peer)</td>
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<tr>
<td></td>
<td></td>
<td>• Participation in peer support</td>
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</table>
Table 5

*Overview of categories and sub-categories*

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<tr>
<td>Patient-level influences on hypertension self-management</td>
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<tr>
<td>• Personal beliefs</td>
<td>✓</td>
<td>✓</td>
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Chapter 4

Developing a Personal Sense of Risk: A Grounded Theory Study of Older Rural Thai Men with Hypertension
Title: Developing a Personal Sense of Risk: A Grounded Theory Study of Older Rural Thai Men with Hypertension

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Study design: JS, PW, NS  
Data collection: JS  
Data analysis: JS, BW  
Study supervision: BW, NS  
Manuscript writing: JS  
Critical revisions for important intellectual content: JS
Abstract

**Background:** Hypertension is a public health problem conferring an increased risk of cardiovascular, cerebrovascular, and kidney disease. However, non-adherence to treatment is common in older men who living in rural areas. Knowledge about patients’ experience of living with hypertension is important for promoting treatment adherence.

**Aim:** To develop a conceptual model of the experience of older rural Thai men living with hypertension.

**Methods:** A grounded theory approach was adopted. Semi-structured, face-to-face interviews, with 29 hypertensive older Thai men were conducted in Thailand using purposive and theoretical sampling methods. Data were analyzed according to the constructivist grounded theory analytical method that included initial and focused coding, and constant comparison.

**Findings:** ‘Developing a personal sense of risk’ emerged as the core category, which incorporated the related four sub-processes: comparing healthcare provider information with stories, comparing one’s own situation with stories, changing personal sense of risk, and changing risk-related behavior. Despite awareness of multiple negative clinical outcomes, older men focused on one particular clinical outcome, using only the selected outcome (stroke, heart disease, kidney failure) to monitor their risk. Over time, new information in the form of stories about people they knew influenced their sense of risk and likelihood of engaging in risk reducing activities.

**Conclusion and implications for nursing:** This investigation provides a conceptual model for healthcare providers to understand older men’s perceptions of personal risk for complications of hypertension. A personal sense of risk influences risk-related behavior change.
Implications for nursing and health policy: The findings suggest that personal sense of risk as a factor contributing to more effective self-management thus the development a tool for assessing a personal sense of risk in older men with hypertension is required. As stories have power, effective storytelling interventions should be developed to improve self-management. Hypertension care policy needs to be developed for individualized approaches.

Keywords: Grounded theory, Hypertension, Older men, Risk determination, Risk perception, Thailand
Introduction

Hypertension is an important global public health threat; it is a leading risk factor for cardiovascular, cerebrovascular, and kidney disease (Bromfield & Muntner 2014; Cate et al. 2015; WHO 2018; Yang et al. 2017). Poorly controlled hypertension can lead to a host of hypertension complications such as stroke, heart disease and impaired kidney function (Forouzanfar 2017; Lee 2018; Leelacharas 2015; Simonds et al. 2017). The prevalence of hypertension varies in different regions of the world (Mills et al. 2016). In Thailand, older men (≥60 years old) face a significantly higher likelihood of developing hypertension and its complications than older women (Chongthawonsatid 2015). For example, the number of men and women with stroke in 2011 was 319 and 117, respectively (Bandasak et al. 2011).

Hypertension is one of the leading causes of death and disability in Thailand and other developing countries (Mohsen 2018; Tibazarwa & Damasceno 2014). In Thailand, adherence to hypertension treatment regimens is lower among rural men compared to men in urban settings, leading to greater disparities in hypertension control across geographic regions (Aekplakorn et al. 2012). An important contributing factor to treatment non-adherence is the failure to perceive hypertension as a serious disease (Suthipan & Intarakamhang 2017; Udompittayason, Boonyasopun, & Songwathana 2015).

Although there is no clear explanation for the high level of treatment non-adherence among older rural men in Thailand, studies in other countries have identified socio-cultural influences such as limited access to healthcare, religious beliefs, culture, lack of trust in providers or in the medical system, and income level (Bennett 2013; Elbur 2015; Long et al. 2017). Studies have found a gender difference in treatment adherence as men were less likely to adhere to treatments and were less sensitive to knowledge about negative outcomes than women.
Having knowledge about hypertension, hypertension-related complications, and perception of one’s own risk for hypertension co-morbidities, positively affected behavior and contributed to medication adherence among African American men (Long et al. 2017). However, another study found that knowledge alone is often insufficient for behavior change and treatment adherence (Bennett 2013). Bennett (2013) found that having knowledge about complications of hypertension was not sufficient to change behavior, as urban African American men did not seek treatment or engage in self-management until they experienced severe complications. This also suggests that knowledge about risk does not always translate to behavior change.

Based on the findings of the current review, it is unclear how knowledge operates among older Thai men, why knowledge about risk for negative outcomes does not lead to changing behavior, how older men respond to the diagnosis, how they integrate hypertension into their daily lives, how/whether sense of risk lead to behavior changes, and how sense of risk develop. Due to this complexity, it’s no wonder that there is currently a lack of model to explain experience of older men with hypertension (Bennett 2013). Thus, current hypertension management strategies designed to increase self-management may not be sensitive to, address or reflect the translation of knowledge to change in behavior, the role of personal perception of risk, or how that perception develops among older rural Thai men, which in turn may affect their behavioral change.
Purpose

The aim of this study was to develop a conceptual model explaining the experience of older rural Thai men living with hypertension and how they respond to recommendations for self-management.

Methods

Research Design

This study utilized the grounded theory methodology (Charmaz 2014; Strauss & Corbin 1998). Grounded theory seeks to understand how individuals create and construct social realities and how those realities influence their actions. It allows for an in-depth understanding of a social process (Blumer 1969) which in this case explicates the experience and the response of older rural Thai men diagnosed with hypertension. Grounded theory seeks to generate a conceptual explanation, eventually a theory or conceptual model, focusing on the social processes (Charmaz 2014; Strauss & Corbin 1998) by which the response to hypertension diagnosis is created that is grounded in participants’ perspectives and explanations.

Participants and Setting

Participants were older male patients with hypertension living in rural communities in western Thailand. They were invited to participate via public health nurses working in their region. Interested men were then contacted by the researcher who explained the study. A purposive sampling method was initially used to recruit suitable participants based on the inclusion criteria. Participant-specific inclusion criteria included; (a) male, aged 60 years or older, and currently a patient in the local community health center (b) diagnosed with hypertension, (c) ability to understand and speak Thai, and communicate sufficiently, and (d)
willing to participate in the study. Next, theoretical sampling was employed in response to ongoing analysis. Theoretical sampling occurs as the data collection progresses to find specific information to add depth to conceptual model which can be done by either finding specific people to interview who have had a specific experience, or by altering interview questions (Strauss & Corbin, 1998). In this study, after data analysis, theoretical sampling was used by modifying interview questions or generating new questions to gain specific information regarding emerging concept or categories.

Recruitment ended when data saturation on selected categories was reached, defined here as the time when the researcher cannot discover new dimension in data being collected (Strauss & Corbin 1998). In this study, saturation occurred particular around how personal sense of risk change. Twenty-nine older men with hypertension took part in the study. The age of men participating in the study was between 60 and 80 years (mean 68.77). The participants’ characteristics are presented in Table 1.

**Data Collection**

Data were collected from September 2017 to July 2018. All interviews took place in participants’ homes. Interviews lasted between 20 and 60 minutes (average 45 minutes). Initial interviews lasted 50 minutes. Five interviews only lasted 20 minutes, were these repeated interviews for clarifying some information. All interviews were digitally recorded in Thai and all audio data files were transcribed verbatim by the first author after listening to each one several times. Initially I translated the entire 10 interviews and then when data collection progresses, I translated quotation, codes, categories, conditions, and dimensions from Thai to English for data analysis with major advisor.
Initial questions were non-directive and open-ended such as “Please tell me about what things have been like for you living with hypertension?” This question was intentionally non-directive so that older men could lead us in the direction that was most relevant to them. I asked open question because I would like to invite them to share their experience from their perspectives. When I asked this question, I listened to what older men said and what they omitted. These would suggest areas to explore in greater depth. Then, I followed participants’ data that they talked about their experience from their perspective when living with hypertension. Next, I talked to new or previous participants by asking new questions. The new questions were determined when we found the new concept reflected in emerging categories or when we would like to identify the dimension or properties of the categories.

For example, after asking question, “Please tell me about what things have been like for you when living with hypertension?” older men started talking about ‘not thinking they really needed the medications or behavior change.’ They thought they would probably not have a stroke because they did not have any symptoms or their blood pressure was not too high. They told me about stories of other people. They heard or saw that other people had headache or dizziness and then got stroke. Moreover, they talked to me that they compared themselves to others that they heard or saw, if they had symptoms like people who had stroke, they thought they were at risk for stroke. From their explanations, I got to a personal sense of risk. Therefore, during subsequent interviews, topics discussed with older men included sources of information about complications of hypertension, their experience of sense of risk, and sense of risk’s influence on older men.

As data collection and data analysis occurred iteratively, interview guides were revised according to memos that the researcher wrote after analyzing each interview. Once data analysis
had commenced and categories began to emerge, theoretical sampling was used to more fully explore the emerging categories, identify dimensions and relevant conditions, identify interaction among categories, and develop the emerging conceptual model (Charmaz 2014; Strauss & Corbin 1998). The questions were changed as the study progressed to become more focused on the emerging categories. For example, from the analysis, it seemed like risk perception influenced their actions. Then, I thought I need to explore how do they think about risk of hypertension and how does the perceived risk influence their hypertension self-management. Thus I added these questions to my interview guide, to identify relevant conditions, and the consequences: ‘What are some of the possible hypertension complications that you know of that some people might have? Have you ever seen someone suffering from these complications? Would you consider yourself at risk for developing hypertension complications and what makes you think so? How does that affect how you take care of your hypertension?’ While collecting data, probing questions were used such as ‘Could you tell me more about that? Could you tell me why you felt that?’ encouraging the participants to clarify their experiences and describe them in greater detail.

A total of 34 interviews were conducted with 29 older men as some individuals were interviewed on more than one occasion, which allowed probing and clarification of issues that were raised. Before the second interviews, the questions were modified for sufficient data and coding. Thus, theoretical sampling was achieved through revision of interview questions to explore directions indicated by participants (Charmaz 2014).

**Ethical Considerations**

This study was approved by the ethics committee of the University of Wisconsin-Madison (number 2017-0740) and Phetchaburi Provincial Public Health Office (number
Older men who met the inclusion criteria were invited to participate and were further introduced to the purposes and method of the study. The interview was one-on-one and was conducted via one to two interviews per participant. Participants were guaranteed that they could withdraw, without penalty, from the interview at any time and for any reason. Written informed consent was obtained, and privacy and confidentiality were assured. All interview transcripts were kept confidential, using reference numbers instead of real names. No link was made between the consent form and the interviews so no identifying information was included on the transcripts and no key was created. They were informed that the results would be presented in a way that assured the participant’s confidentiality by using the number instead of a specific name of participants.

**Data Analysis**

Data collection and analysis occurred iteratively. All interviews were transcribed verbatim for the entire recording. Data were analyzed according to the tenets of grounded theory to conduct data analysis, specifically procedures outlined by Charmaz (2014) which include initial and focused coding. In the initial coding stage, the first author conducted line-by-line coding. For example, an older man stated,

*I was like my father...because our blood pressure was too high and we liked to eat salty food...and also my friend as I heard from him about his eating.* (P#7: a 60-year-old man with 2 months of hypertension)

This quote was coded as (a) seeing oneself as being like others, (b) comparing blood pressure to others, and (c) comparing eating behavior to others. After initial coding, incidents or data were compared to other incidents or data. The codes and categories were compared across interview, within interviews and with research literature to find points of similarities and
differences as the basis for category development (Charmaz 2014; Strauss & Corbin 1998). For example, I used the code “seeing oneself as being like others” to compare with other interview data and extant literature about risk perception. Then I recoded and modified the categories based on relationship described by participants and observed by the researcher (Charmaz 2014). After that, the research team reviewed the initial codes and gradually moved on to a more abstract and interpretive stage of focused coding. During focused coding the most significant or frequent initial codes were sorted, synthesized, integrated, and organized (Charmaz 2014). Focused coding was performed after the research team met to discuss which initial codes made the most analytic sense to categorize the data incisively. For instance, focused coding was used to distinguish between the approaches that older men used to develop a personal sense of risk into four main categories: “comparing provider information with stories,” “comparing one’s own situation with stories,” “changing sense of personal risk,” and “changing risk-related behavior.” Focused coding developed the relationships between categories (Charmaz 2014). The relationship between categories was made clear creating visual representations or diagrams of categories and their relationships. Constant comparison and memoing were used throughout analysis process to condense and categorize codes and categories to facilitate theoretical development (Charmaz 2014). Through this phase, constant comparison was used, for example, interview statements and incidents were compared within and across interviews. Data were compared and analyzed iteratively, constantly modifying categories and subcategories. As saturation was approached, categories were organized into a logical, coherent emerging conceptual model of developing a personal sense of risk. Out of four emerging categories, the core category was selected based on its capability to capture the studies phenomena at a more conceptual level and its interlinking with all remaining categories.
**Trustworthiness of the Study**

To enhance rigor, the author used multiple strategies based on the evaluation criteria outlined by Charmaz (2014). Credibility was satisfied by collaborative discussion among the research team members regarding initial codes, emerging categories, and the evolving conceptual model. An audit trail for documenting and reflecting on memos was used throughout the study process. Quotes from multiple older men were reviewed. Member checking was used by the first author during data collection and analysis to determine whether participants’ experiences were accurately described by showing them components of the evolving conceptual model and asking them whether their experience was represented, missing, or could be better described than what was reflected in the model. Their feedback was used to both elaborate on and confirm the conceptual model (Charmaz 2014). Concerning originality, we elected to focus on categories that would offer new insights about developing personal sense of risk and provide a new conceptual rendering example of the choice (Charmaz 2014). Finally, regarding usefulness, the data provided critical information for health care providers to create nursing management strategies that are sensitive to and reflect risk perception of older male patients.

**Results**

The analysis revealed ‘developing a personal sense of risk’ as a basic social process engaged in by older Thai men following diagnosis of hypertension. Developing a personal sense of risk was described as how older men perceived themselves to be at risk for complications of hypertension. They perceived themselves to be at risk for complications of hypertension when their situations aligned with stories of others who experienced a negative health outcome such as stroke or renal failure.
Developing a personal sense of risk, which emerged as the core category, can be described as an ongoing process which was related to four sub-processes: comparing provider information with stories, comparing one’s own situation with stories, changing sense of personal risk, and changing risk-related behavior (Fig. 1). The most important outcome gain achieved from this developing a personal sense of risk was that older men changed their risk-related behavior. Older men selected one particular risk outcome, used the selected risk outcome (stroke, heart disease, kidney failure) to monitor their risk. In other words, risk outcome focus was the factor that influenced how they determined their own risk. Older men’s sense of personal risk can change over time by a number of factors including visible markers (e.g., subsequent cholesterol levels), symptoms (e.g., diminishing symptom), and new stories.

The factor that acted at all sub-processes was the stories. The process of developing a personal sense of risk can be influenced by stories that older men heard along the way. Older men listened to stories that were from people they knew and about people they know or may not know; for example, they heard from their friend about someone in another village who had hypertension and stroke. Sometimes, they have accidentally heard stories and sometimes they intentionally listened to stories about/from people with hypertension. The content of the stories varied from the experiences of others who had already had a negative health outcome, to what happened to others before getting bad outcomes, to the strategies that people used to manage their hypertension. The stories were applied to their own, individual situation, because the older men compared their personal situation with stories they heard. The stories they heard evolved based on their personal risk outcome focus.
Comparing Provider Information with Stories

At the time of diagnosis, all older men acknowledged receiving information about the possible complications of hypertension from their health care providers. Older men were reminded of complications at subsequent appointments. Based on what providers communicated during these visits, older men had knowledge about and understood the risks related to complications of hypertension.

Stories confirming or disconfirming provider information. At the time of diagnosis, all older men recalled stories they had heard or seen about people with hypertension including people who had experienced complications of hypertension. Every older man described a process, beginning at the time of diagnosis, of engaging in comparisons between stories they had previously heard or seen about people with hypertension and what providers told them. When stories they heard were consistent or inconsistent with what providers were saying, they described the stories as confirming or disconfirming information from providers. Comparisons were particularly used to identify the risk of serious complications. Components in stories that were most prominent in older men’s accounts included; the relationship of symptoms to likelihood of complications, the importance of risk behaviors, and the importance of lab tests and blood pressure reading.

The relationship of symptoms to likelihood of complications. When the stories they recalled about other people who experienced bad outcomes/hypertensive complications, all included presence of prior symptoms, the men discounted providers’ claims that symptoms were not a necessary precursor of bad outcomes. This coupling of bad outcomes and symptoms even suggested to some men that symptoms actually caused the bad outcomes.
The nurse told me about symptoms that we might not have symptoms...But I thought severe headaches caused strokes...because I saw people with hypertension who had strokes and they always had headaches...I thought symptoms must happen before we had other problems. (P#13: a 62-year-old man with 19 years of hypertension)

In contrast, provider information could be confirmed when stories they heard or saw about people with bad outcomes included descriptions about bad outcomes without symptoms.

The nurse told me that it was not necessary to have symptoms. It was true...because I saw my neighbor who had a stroke but he did not have any symptoms before... (P#16: a 77-year-old man with 10 years of hypertension)

Risk behavior and complications. Pertaining to personal risk behavior, some older men linked behaviors including eating salty or fatty food or not taking medication correctly with bad outcomes when stories confirmed what providers said.

I listened to the nurse that if we ate excess salty and fatty food, bad things came. I also heard this from my neighbor who ate too much salty food and then he got “Rok Tai” (renal failure). (P#4: a 78-year-old man with 5 years of hypertension)
However, in some cases, the relationship of behaviors to risk was a disconfirming story.

_The nurse told me to quit smoking as it caused heart problems...But I saw my friend who smoked; bad things did not happen to him._ (P#6: a 72-year-old man with 8 months of hypertension)

**Lab tests, blood pressure measurements and complications.** Others linked abnormal lab tests (e.g. high cholesterol, abnormal renal function) and high blood pressure readings to bad outcomes. They perceived that abnormal lab tests and high blood pressure reading caused the bad outcomes when stories of other people with hypertension confirmed what their providers said.

_The doctor talked to me about high cholesterol and stroke. I knew...I also heard someone had high cholesterol and then he had a stroke. I thought it made him have a stroke._ (P#9: a 70-year-old man with 7 years of hypertension)

**Comparing One’s Own Situation with Stories**

In this process, older men compared their own situation to the stories they heard or saw about people with bad outcomes of hypertension, which informed the development of their personal sense of risk. They selected the risk outcome focus before comparing their own situation to others. Then, they compared their circumstances with stories they listened to,
particularly in relation to the bad outcome that they focused on. For example, they focused on a stroke thus they compared their cholesterol to other patients who had had a stroke.

**Determining risk outcome focus.** Stories about other people they knew provided the lens through which older men determined which complications they should be worried about or what they feared the most. Stories were the condition that affected the determination of risk outcome focus. Despite hearing about the range of possible outcomes from their providers, they frequently focused on a single outcome, for example, they feared and worried about a stroke after seeing someone who was paralyzed from a stroke, often largely ignoring the other possible outcomes such as renal failure or heart disease.

*I heard that someone with hypertension had renal failure. But I saw a man in my village; he had hypertension and then had a stroke. He had paralysis and cannot walk. I thought the stroke seemed more awful than renal failure because if I was paralyzed by a stroke, I would not be able to walk, like him...I feared and needed to be careful not to have a stroke. (P#7: a 60-year-old man with 2 months of hypertension)*

A few, who knew someone with renal failure or heart disease, and saw what they went through, tended to focus on those outcomes.
Someone in my village had kidney failure. I saw he needed dialysis. It seemed awful to me...I didn’t want to be like him...I was concerned about this problem (P#5: a 80-year-old man with 5 years of hypertension)

All older men focused on only one risk outcome, not multiple risk outcomes at the same time. Most of them focused on a particular outcome over time. However, some older men shifted outcome focus due to lab test results and/or hearing new stories.

Initially, I was concerned about stokes because I saw my neighbor had one and he cannot walk. But when my blood (kidney function) was abnormal I thought about my kidneys….I heard that it can make me have “Rok Tai” (kidney failure). (P#19: a 79-year-old man with 8 years of hypertension)

Determining personal risk. Based on the outcome focus, older men started to determine their own risk by using a risk comparison strategy and monitoring the particular risk they were focused on. Components in their own situation that they used as basis for comparison of self to others and determining their personal risk included; visible markers (blood pressure readings, lab tests), symptoms, and involvement in personal risk behaviors. These were the conditions that influenced the determination of personal risk.

The personal risk for stroke. Regarding the personal risk for stroke, most men compared the blood pressure readings and cholesterol levels of the person who had experienced the bad outcome, if they knew it, to their own blood pressure or cholesterol levels. Some participants
used presence or magnitude of symptoms as the basis for comparison and determination of their own risk. In some cases, they compared behaviors, such as forgetting to take medication and eating fatty food, between themselves and people they knew who had experienced bad outcomes. When their experiences were aligned with others who experienced a stroke, their sense of risk increased.

*When I knew I had high cholesterol, I worried about a stroke. Someone I knew had high cholesterol, dizziness and then had a stroke...I also had dizziness.*

(P#12: a 73-year-old man with 6 years of hypertension)

*He always forgot to take medication and then he had a stroke...I forgot to take medication when traveling...when I did not take medication, blood pressure would increase. It made me fear having a stroke.* (P#17: a 60-year-old man with 2 years of hypertension)

**The personal risk for heart problems.** Older men who focused on heart problems tended to monitor their cholesterol and blood pressure. They only saw themselves at greater risk for heart disease if their cholesterol level and blood pressure aligned with stories about people they knew with bad outcomes.

*I worried about getting heart disease and my cholesterol and blood pressure were high. My neighbor told me that others had heart disease due to high cholesterol and high blood pressure...I checked my blood pressure every month*
and my cholesterol every year and compare to previous values...sometimes I
compared with my friend. (P#20: a 61-year-old man with 4 years of hypertension)

The personal risk for kidney problems. Concerning their risk for kidney problems, older
men who focused on kidney problems monitored lab tests for kidney function. When the lab
value aligned with a person they knew who had a bad outcome, they determined themselves as
being at risk for kidney failure.

My blood test was not good. Someone had abnormal kidney function and then he
had renal failure with dialysis. I was afraid as it might happen to me ...I
rechecked it every year... (P#14: a 77-year-old man with 5 years of hypertension)

Changing Sense of Personal Risk

The process of changing sense of personal risk for major complications occurred as the
participants listened to, and integrated, new stories they heard over time with their own
experience and as they were told about lab tests. Most men described either listening more
deliberately to stories about/from people with hypertension, or seeking out stories deliberately as
they continued to develop their personal sense of risk. In most cases, sense of personal risk often
evolved over time, sometimes increasing and sometimes decreasing.

Conditions that impact change in sense of personal risk

Change in sense of personal risk depended on a number of conditions impacted, including
visible markers (lab values), symptoms, and new stories.
**Increasing sense of risk.** Older men’ personal sense of risk can increase by monitoring lab values connected to outcome focus and developing a new symptom which correspond with stories, or hearing a new story.

**Lab values.** Older men’ sense of risk increased when their subsequent lab tests including cholesterol levels and kidney function results were abnormal or higher than the previous results, regardless of whether stories they heard had included any descriptions of lab values.

...*Last year my cholesterol was higher than in the past. This made me worried about it... because now I thought I had a higher risk than in the past.* (P#27: a 67-year-old man with 5 years of hypertension)

**Developing new symptoms.** Sometimes a personal sense of risk increased as a result of developing new symptoms or experiencing an increase in the severity of symptoms.

*Previously, I just had a headache. It was not severe...I could do my work and felt better after taking medication. But I was very worried when I also had severe dizziness, I feared to have a stroke.* (P#15: a 65-year-old man with 2 years of hypertension)

**Hearing a new story.** When older men saw or heard stories along the way, they reassessed their own risk, particularly when the stories aligned with their personal experiences. Some older men became anxious when hearing other people’s experiences, especially when the
story paralleled their own experiences and resulted in a negative health outcome. For example, after hearing a new story about someone who did not have prior symptoms, the individual would reassess the relationship between presence or absence of symptoms and potential negative health outcome.

_I went to the hospital, I heard other patients talking about high cholesterol and strokes...My cholesterol was high...I asked my friend who just recovered from a stroke about his cholesterol. He had high cholesterol. It made me worry._

(P#22: a 77-year-old man with 10 years of hypertension)

**Decreasing sense of risk.** Decreasing sense of personal risk can also be influenced by labs results, diminishing symptoms, and new stories.

*Lab values.* Older men experienced a diminished sense of risk when their subsequent cholesterol levels or kidney function tests improved to within or near normal range after being abnormal.

_First time, my kidney function was not good. Then, last 3 years ago, It was better... It made me think my risk for having kidney failure decreased._ (P#28: a 70-year-old man with 6 years of hypertension)

**Diminishing symptoms.** Reducing the severity of symptoms or having an absence of symptoms can lower the sense of risk.
Previously, I worried about my dizziness. Sometimes it happened once a month and I cannot go to my farm. After taking medicine from the doctor, I felt better and I thought my chance to get bad outcome decreased. (P#29: a 68-year-old man with 3 years of hypertension)

**Hearing a new story.** As older men heard or saw new stories about bad outcomes that did not align with their situation, their sense of risk decreased, even though these new stories might contradict earlier stories.

_I saw my neighbor who drank alcohol had a stroke, I worried about a stroke. Later, I heard my friend who drank but nothing bad happened to him. This made me think it (stroke) might not happen to me, like him. So, I did not worry any more._ (P#24: a 75-year-old man with 3 years of hypertension)

**Factoring in provider information.** When new stories about bad outcomes aligned with personal experience, increasing sense of personal risk, older Thai men in this study sometimes reconsidered information from providers that they had previously dismissed. When this occurred, the credibility of provider information increased and some began to reconsider information from the provider, taking it more seriously and becoming more interested in risk behavior changes.
In the past, I never got dizzy... But later I started getting dizzy. I remembered that the nurse told me but at that time I was not concerned. Also, my friend told me that he had dizziness. It made me try to reduce salty food. (P#26: a 66-year-old man with 3 years of hypertension)

When personal experience, stories from other people and provider information all aligned, participants’ personal sense of risk increased significantly, often leading to new or increased engagement in risk reducing behaviors.

**Changing Risk-Related Behavior**

All older men who personalized risk engaged in some behavior change to reduce their risk. They often did this by using information from stories but using information from providers only when stories and personal situation aligned with provider information. The strategies to minimize their risks included: taking medication more reliably, making lifestyle changes, and integrating traditional Thai and modern medicine.

**Taking medication more reliably.** Most men shared that they falsely reported taking their blood pressure medication as prescribed when asked at medical visits; they usually reported that they took medication every day, but in fact they did not take it as prescribed. However, when older men’s sense of risk increased, they often started to take medication as prescribed. Some older men described changing their behavior, for example, from forgetting medication due to work schedule to carefully taking their medication as prescribed. Some who previously did not believe their medical providers about the importance of taking medications as directed became much more concerned about adherence.
Previously, I only took medications some days because I didn’t have any symptoms. But in the last 6 months I fainted and I had very high cholesterol. I heard my friend had high cholesterol and then he had a stroke. Then I started to take it every morning. (P#11: a 65-year-old man with 4 years of hypertension)

**Making lifestyle changes.** After aligning their situations with stories, some older men started eliminating salt and fat, exercising, quitting smoking, and reducing alcohol consumption.

**Eliminating salt and fat.** Older men who perceived themselves to be at risk especially, when their symptoms and lab tests aligned with stories about bad outcomes talked about more severely restricting salt and fat from their meals. They tended to determine their success at following a restricted diet by comparing current to past eating habits.

*Firstly, I did not reduce it because my blood pressure was not too high, no symptoms...Until I fainted last 2 months and my cholesterol was high. I feared having a stroke. I tried to reduce fatty diet and now I am not eating it.*

(P#12: a 73-year-old man with 6 years of hypertension)

**Exercising.** Some older men felt that lack of exercise might put them at higher risk and that too much exercise could lead to greater risk of a bad outcome, as they heard from stories that someone died after too much exercise. Thus, the stories informed not only their level of risk but also how they decided to manage their risk.
My blood pressure was too high. Then, I started cycling every morning. Since I started exercising, my blood pressure decreased. I never did it over an hour because I heard someone ran and he died and the nurse told me that didn’t overdo it. (P#28: a 70-year-old man with 6 years of hypertension)

**Quitting smoking and reducing alcohol consumption.** Others who drank and smoked perceived themselves to be at risk for stroke as they heard stories that these activities led to bad outcomes. This prompted them to reduce or stop smoking and drinking.

My blood pressure was still high. First, I can only reduce it. But, I worried when compared to my friend...He had a stroke. I tried and now I can stop it. (P#23: a 60-year-old man with 2 years of hypertension)

**Integrating traditional Thai and modern medicine.** Older men started with modern medicine and took their medications at least some of the time. But when their blood pressure was still high and they had some symptoms such as headache; a heightened sense of risk led them to combine traditional Thai medicine with ‘western’ medicines. They combined traditional Thai medicine with western medicine as they believed that traditional herbal remedies were natural products, safe and free from any side effects and can help to reduce their blood pressure. Belief in traditional medicines was influenced by traditional beliefs as they heard and learned from older people in the village. Some older men thought that using only modern medicines might not
help to reduce their blood pressure. After using traditional medicines, most participants rechecked their blood pressure, but others solely monitored symptoms as criteria to evaluate the outcomes of remedies. They went to the community health center to obtain follow-up blood pressure measurements because traditional healers cannot take blood pressures; they compared blood pressure measurements between visits. Evaluating outcomes including blood pressure measurement and symptoms monitoring was undertaken after they had been taking traditional herbal medicine within a few months. Failure to achieve a good result encouraged participants to try other traditional herbs until they achieved the desired outcome.

I took medication from the doctor. I used both... I used herb because it didn’t have side effects and might reduce my blood pressure. My friends used it and his blood pressure decreased. He told me to try. (P#21: a 66-year-old man with 1 year of hypertension)

Discussion

This grounded theory study highlights the process of ‘developing a personal sense of risk.’ In this study, older men’s personal sense of risk is created by aligning their circumstances with both stories and provider information about risk, which in turn influences their risk-related behavior. Overall, the older men focused on a single health risk at a time, monitoring an increase or decrease in their personal risk, leading to an increase or decrease in their sense of risk over time.
Hearing and understanding the risks of hypertension from providers, did not translate into personal sense of risk. This finding is consistent with Patil et al. (2013), who concluded that risk awareness cannot predict risk perception; in their study, healthcare workers were aware of hepatitis B infection but they did not perceive to have an occupational risk for hepatitis B virus infection. The experience of our participants indicated that they knew the risks of hypertension but did not perceive themselves to be at risk until their situation aligned with the stories they heard from people they knew. However, a study by Vahasarja et al. (2015) found that patients with type 2 diabetes did not believe they were at risk for coronary heart disease unless they were told specifically by their primary health care provider that they actually had heart disease.

The findings of our study highlight the importance of stories. For older Thai men with hypertension, these stories are substantially more powerful than medical provider information as determine their personal risk for major complications of hypertension. Older men compared their circumstances thoughtfully to those of other people they knew, especially to those who had negative health outcomes. When their situation did not align with others or they considered their disease not as severe, they perceived themselves as have low or no risk of hypertension complications. Vicarious experience not only plays an important role in risk awareness, but they also facilitate perception of personal risks (Wiethoelter et al. 2017). Notably, the current study suggests that the stories older Thai men heard over time can diminish or heighten their perception of personal risk.

In agreement with existing literature (Clay et al. 2016; Frich et al. 2006) findings from this study suggested that other people’s experiences of hypertension-related complications influenced personal risk. Knowing how such complications affected the other person’s work and family life could add potency in raising older men’s awareness and perception of the risks
involved. Therefore, utilizing storytelling intervention is important because stories seem to be the thing that has the most powerful in term of changing behavior and improving self-management behavior. Previous studies reported that implementation of storytelling interventions such as digital storytelling interventions improve self-efficacy, motivation for self-management, and health behavior change among patients with chronic illness (LeBron et al. 2014; Njeru et al. 2015; Wieland et al. 2017). Through sharing of personal stories, persons attempt to give meaning to their illness (Gucciardi et al. 2016) which could change the way they view their illness. Also, it may yield changes in their approach to managing their condition and their health-related behaviors. Existing studies recommended that before developing storytelling intervention, the assessment of attitudes, knowledge, and behavior among patients as well as the identification of champion storytellers (LeBron et al. 2014; Njeru et al. 2015). Moreover, the findings from this study suggest that the assessment of individuals’ personal sense of risk should be considered.

According to the results, older men focused on one possible health outcome while ignoring the others. Older men perceived their own risk based upon stories they heard about specific risk factors and perceived themselves to be at risk for one risk outcome. However, Lee et al. (2016) found that an individual’s perception of risk was influenced by an underlying process of prioritizing threats. Participants perceived their degree of risk by considering all potential risks and prioritizing them. They considered themselves to be at high-risk, or at little or no risk for each potential risk.

Interestingly, in the current study, older men used a particular risk outcome to determine and monitor their own risk, and decreased or continued to engage in risky behavior throughout the hypertension journey. Perception of their personal risk for hypertension-related complications differed among older men. For example, some older men believed that abnormal
blood tests actually led to bad outcomes while others focused on symptom presence. They perceived that the presence of symptoms such as headaches or fainting would occur before a serious complication such as stroke; this perception led them to alter their risk-related behavior. These findings are consistent with a previous study which demonstrated that experiencing symptoms contributed to self-management (Bennett 2013). Moreover, our study revealed that older men acknowledged paying attention when experiencing symptoms that aligned with stories about negative health outcomes.

Older men in this study believed that abnormal blood tests would give them time to change behaviors. They actually started to manage their condition after experiencing abnormal blood tests. It has been shown that cardiovascular and kidney failure risk perceptions were significantly associated with reducing risk-related behavior among older men (Mohd Azahar et al 2017). This suggests that perception of personal risk turns out to be the key motivational drive to support behavior change (Corneli et al 2014; Ferrer et al. 2018; Hein 2017; Liu 2014; Tonberg et al. 2015; Wagener et al. 2014).

High personal risk perception appeared to be a motivator for changing behavior resulting in a more cautious approach, such as eliminating salt and fat from their meals. This is consistent with previous studies which found that risk perceptions is thought to play a key role in the behavioral change as it appears to have encouraged individuals to engage in the protective behavior (Clay et al. 2016; Lima et al. 2018; Saver et al. 2014). Low or wrong risk perception is a major barrier to the adoption of self-management behaviors and, as a result, an additional risk for the occurrence of other complications (Rouyard et al. 2017; Sachs et al. 2017). In addition, findings from this study that risk behavior change followed personal sense of risk is consistent with Protection Motivation Theory (PMT) which postulates that people are more likely to protect
themselves when anticipate negative consequences and have the desire to avoid them (Becker & Maiman 1975).

A large body of literature on risk perception strongly suggests that when people feel they are at greater risk, they tend to engage in self-management behavior or behavior changes (Clay et al. 2016; Lima et al. 2018; Rouyard et al. 2017; Sachs et al. 2017; Saver et al. 2014). However, previous studies did not look at how those risk perception involve and in response to risk perception. Thus, findings from this study provides insight into how risk perception actually develops and changes overtime.

Our results reveal that risk information from providers is unlikely to help older men manage their hypertension-related risks. Consistent with previous findings, quantitative risk information did not help patients with type 2 diabetes mellitus adopt and maintain healthy behaviors (Saver et al. 2014). One noted contributor from the prior study is difficulty understanding risk information; however, it is unclear how health information is delivered. Interestingly, our study gives insight on how older men use risk information they receive from providers to determine their perception of risk. They were concerned about provider information only when it was confirmed by community stories or when their own experience aligned with provider information. Provider information was used in reducing risk-related behavior based on a particular risk outcome that they perceived themselves to be at risk. Thus, risk perception overpowered information from providers.

From the finding of this study, it seems like information is sought out and passed on orally. In other words, oral tradition is a source of information as older men rely on oral community to get information about hypertension related-complication from other people. In Thai culture, especially among older adults and someone unfamiliar with technologies or illiterate (e.g.,
people who live in rural communities), they learn orally through participation in story-telling and ritual (Boonyiam 2015; Ketkowit et al. 2000). Previous studies suggested that Thai people, traditionally, in order to seek information and treatment for their health problems have relied on their family members, friends and neighbors (Pansuwan et al. 2014; Rattanawarang 2015; Seesawang & Thongtang 2018; Udompittayason et al. 2015; Upatum 2016). They were less likely to seek information from social media (Upatum 2016). In addition, they decided to seek information from healthcare providers only when they experienced severe problems or symptoms (Pansuwan et al. 2014).

Limitations

This study was conducted at only three community health centers in Phetchaburi, Thailand. Findings from this study are representative of a small group of older Thai men with hypertension who are living in rural communities. Therefore findings should be generalized with caution. Additionally, further research is needed in other groups, across different cultures and societies.

Future Research

The findings of this study describe the theoretical possibilities of developing a personal sense of risk. More research is needed to examine how a personal sense of risk affects long-term risk-related behavioral change. As stories seemed to have power, researchers could further investigate characteristics of story tellers and whether it mattered in terms of weight of the story and impact on older men’s personal sense of risk. Researchers could develop and investigate the effects of storytelling intervention on appropriateness of perception of personal risk, attitude, and behavior change. Other researchers may wish to develop a tool to assess a personal sense of risk.
which includes perceived risk. In addition, future research could explore why information about complications of hypertension from healthcare providers has less power than the information from stories. Finally, there is also a need for research to further explore what about family influence and personal sense of risk.

**Conclusion and Implications for Nursing Practice**

The core category, developing a personal sense of risk, explains how older men with hypertension obtain a sense of risk and achieve risk-reduction behavior. The most important motivation for increasing sense of risk and adhering to risk-reduction behavior is the alignment of their own situation with community stories about negative health outcome and provider information. To determine and monitor personal risk over time, older men tend to focus on a particular outcome. Healthcare providers can play an influential role in perception of risk for complications of hypertension among older men with hypertension. It is important to the nurses to understand what risk outcome they focus on and why they focus on that risk outcome. Nurses should assess personal sense of risk by using a standard tool because this information can be useful in encouraging behavior change. Also, providers should individualize the delivery of medical information about hypertension complications, by initially addressing the medical outcome most concerning to the patient; this will facilitate the desired behavioral change. The information might help to improve older men’s understanding of hypertension-related complications, which would enable them to reassess their own risk and make informed choices about their hypertension care. Since stories are very powerful, the nurses should assess the stories that older men have heard or seen, so they can design and test effective storytelling interventions to promote treatment adherence.
Implications for Nursing Policy

Our findings can be used as baseline data to raise awareness for healthcare professionals. Healthcare professionals should include these older men in their plans when designing and developing hypertension care management programs. Health policy nurses, nursing educators, managers and researchers should work together to develop a measurement tool to assess individual’s personal sense of risk for hypertension-related complications to be implemented in Thai community health centers. The policy for hypertension care is required to develop as an individualized policy by considering individual’s perceived risk, powerful story, and the nature of the disease, and these factors should be added in hypertension care model in Thailand. Hypertension care policy needs to be updated in order to achieve the goals of the national and the WHO-CDC Global Hearts Initiative for decreasing the burden of cardiovascular disease. Nursing education should incorporate the concepts and process of risk perception in curricula at both undergraduate and post-graduate programs in Thailand in the future, in order to prepare nurses at different level to understand and provide male-focused gender-specific care.

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Conflict of Interest

The authors declared no potential conflicts of interest.
Author Contributions

Study design: JS, BW, NS; data collection: JS; data analysis: JS, BW; study supervision: BW, NS; manuscript writing: JS and critical revisions for important intellectual content: JS.
References


Table 1. Baseline Participant Characteristics (Total sample: n 29)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number of participants (%)</th>
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<tr>
<td><strong>Age range (years)</strong></td>
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<tr>
<td>60-69</td>
<td>16 (55.17)</td>
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<tr>
<td>70-79</td>
<td>12 (41.38)</td>
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<tr>
<td>80-89</td>
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<tr>
<td><strong>Religion</strong></td>
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<tr>
<td>Buddhism</td>
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<tr>
<td><strong>Marital status</strong></td>
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<tr>
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<tr>
<td>Married</td>
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<tr>
<td>Widow</td>
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<tr>
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<tr>
<td>Secondary school</td>
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<td>College graduate</td>
<td>2 (6.90)</td>
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<tr>
<td><strong>Employment status</strong></td>
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</tr>
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<td>Agriculture</td>
<td>10 (34.48)</td>
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<tr>
<td>House work</td>
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<tr>
<td><strong>Time with Hypertension Diagnosis</strong></td>
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<tr>
<td>Less than 1 year</td>
<td>3 (10.34)</td>
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<td>1-5 years</td>
<td>17 (58.62)</td>
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<tr>
<td>6-10 years</td>
<td>6 (20.69)</td>
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<tr>
<td>11-15 years</td>
<td>1 (3.45)</td>
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<tr>
<td>16-20 years</td>
<td>2 (6.90)</td>
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<tr>
<td><strong>Comorbidity</strong></td>
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<tr>
<td>Diabetes mellitus</td>
<td>5 (17.24)</td>
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<tr>
<td>Dyslipidemia</td>
<td>4 (13.79)</td>
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<tr>
<td>Ischemic heart disease</td>
<td>1 (3.45)</td>
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<tr>
<td>None</td>
<td>19 (65.52)</td>
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<tr>
<td><strong>Health service mostly used</strong></td>
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<tr>
<td>Primary care unit</td>
<td>26 (89.65)</td>
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<tr>
<td>Community hospital</td>
<td>2 (6.90)</td>
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<tr>
<td>Private clinic</td>
<td>1 (3.45)</td>
</tr>
</tbody>
</table>
Figure 1. Developing a Personal Sense of Risk.
Chapter 5

Summary
This dissertation study has made significant contributions to the field of perception of risk of chronic disease among older male patients. This dissertation study fulfills the aim of gaining a deeper understanding of the experiences of older men living with hypertension. This study provides valuable insights into how older men view their risk of developing hypertension-related complications and the resulting degree to which they cope with hypertension in daily life. Understanding the experience of individuals living with hypertension can help healthcare providers develop and improve a holistic approach to caring for such patients.

**Summary of Findings**

Based on an integrative literature review (paper 1), I learned that men with hypertension who experience symptoms and had other diseases such as diabetes were more likely to adhere to treatment as they perceived their health was at risk. However, how older male patients with hypertension develop a personal sense of risk has not been studied. As shown in this integrative review, there is a large body of existing research focusing on risk awareness among men with hypertension, and all studies were conducted in urban areas of developed countries. The research findings showed that even though most men had knowledge about complications of hypertension they still were unlikely to adhere. Thus, we were left with three important unanswered questions: (1) Why does having knowledge about one’s risk of hypertension not always lead to treatment adherence? (2) How do older men living in rural areas develop a personal sense of risk for developing major complications of hypertension and what factors contribute to this development? (3) How does this sense of risk motivate older male patients living with hypertension in rural areas to change their behavior? These questions derive from a lack of research about the development of a sense of risk among older men living with hypertension in...
rural areas. As such, this integrative review provided evidence for the importance of this dissertation.

From the systematic review of qualitative studies (paper 2), I learned that hypertension self-management is a multifaceted challenge for people with hypertension. Moreover, I learned that an individual’s ability to self-manage is influenced by personal, community and organizational-related factors. Nevertheless, there is little knowledge about what factors contribute to the self-management of hypertension among older male patients. In this systematic review, none of the qualitative research studies separated male and female results or specifically investigated the factors that influence self-management capabilities in male patients. Also, I learned that older patients in rural communities, especially men, self-manage their hypertension less well than older patients in urban communities. However, prior studies have not been reported experience of men in rural area and factors influencing their hypertension self-management behavior. Therefore, there are some questions that need to be answered: (1) What factors contribute to the ability to self-manage hypertension among older men? and (2) How do these factors affect the ability of older male patients living in rural areas to cope with hypertension and change their behavior or how these factors operate in their daily lives? Thus, this systematic review revealed gaps in current knowledge for this dissertation study.

Developed using a grounded theory approach, an innovative conceptual model labeled ‘developing a personal sense of risk’ fosters an understanding of this sense of personal risk for developing major complications of hypertension among older Thai men living with hypertension in rural areas. Based on the analysis, ‘developing a personal sense of risk’ emerged as a basic social process engaged by older Thai men with hypertension living in rural areas. This process comprises four sub-processes. When an individual received a diagnosis of hypertension, they
listened to risk information from providers, which led them to ‘compare information to the stories’ they had heard from other people, ‘compare one’s own situation with stories,’ ‘change one’s personal sense of risk,’ and ‘change risk-related behavior.’ Although they were aware of the multiple negative potential outcomes, each one focused on one particular outcome, such as stroke or renal failure. They used this outcome to determine and monitor their personal risk over time by comparing their own circumstances with those of others. Their sense of risk increased when their personal situation aligned with stories that reported negative health outcomes. More active engagement in behavior changes occurred when their personal situation, the stories, and provider information all aligned.

Based on this study, personal sense of risk appears to be a partial solution for addressing the challenges of treatment adherence. We knew from the previous studies that perception of risk influences one’s ability to self-manage hypertension (Bennett, 2013; Elbur, 2015; Long, Ponder, & Bernard, 2017; Welsh, Duff, Campbell-Taffe, & Lindo, 2015), but we did not understand how they develop a personal sense of risk and how one’s personal sense of risk influences the ways older men manage their hypertension. Thus, this study contributes to filling these knowledge gaps. In addition, findings from this study suggest that stories are so powerful in developing a personal sense of risk and risk-reduction behavior. Therefore, another solution for non-adherence could be the creation of storytelling interventions that convey a person’s narrative and experiences. The use of storytelling interventions is premised on the fact that each individual has his or her own unique experiences living with and managing a disease (Gucciardi, Jean-Pierre, Karam, & Sidani, 2016). Thus individuals’ accounts are a valuable information source to both themselves and others. Listening to the stories can assist persons to reflect on their own experiences and recognize others may be experiencing similar struggles and circumstances. This
enables pertinent information to be disseminated on how to deal with or manage their condition. Therefore, this dissertation study contributes to understanding the development and influence of perception of personal risk on hypertension management in daily life among older men.

**Implications**

The findings from this study highlight the importance of assessing a personal sense of risk, as it affects the specific behaviors of older men. Thus, a reliable tool for measuring the personal sense of risk needs to be designed, developed, and standardized. Since a personal sense of risk changes longitudinally among older men, a personal sense of risk assessment should be performed at various times such as with changes in lab tests or symptoms.

Additionally, the finding that older Thai men focus on one particular risk outcome or bad outcome suggests that they ignore other bad outcomes. Therefore, to address this situation, risk communication approaches should be developed aiming to improve older Thai men’s understanding of hypertension-related complications, which would enable them to reassess their own risk and make informed choices about their hypertension care. A personalized hypertension risk communication method should be developed to promote treatment adherence and healthy lifestyle behavior among older Thai men. From this study, older Thai men also perceived that their symptoms cause bad outcomes. Thus, older men’s sense of their personal risk for developing hypertension complications needs to be assessed or measured to see whether it is incorrect or correct. Healthcare providers should provide simple and clear information on the cause of complications, consequences of complications, and on what actions can be done to reduce the risks of developing complications.

This study suggests it is important to develop a storytelling intervention because the stories of other hypertensive patients influence older men’s personal sense of risk and
hypertension management. Therefore, there is a major need for story-based interventions to support disease self-management among older men living with hypertension. Listening to personal stories about hypertension can assist individuals to reflect on their own experiences and connect with others who experience similar struggles and circumstances, supporting self-management (Gucciardi et al. 2016).

**Future Direction for Research**

This study provides a foundation for future research about men living with hypertension. Based on the findings of this study, a personal sense of risk influences risk-related behavior change among older men with hypertension. Thus, future research can examine how a personal sense of risk affects long-term risk-related behavioral change.

Based on the findings, older men listen to the stories of other hypertension patients, and those stories have the power to influence risk outcome focus, personal risk perception, and risk-related behavior changes. Therefore, future hypertension studies should investigate interventions that integrate storytelling to foster and maintain behavioral changes to lower blood pressure and reduce and prevent complications of hypertension among older men. In addition, researchers could investigate the effects of storytelling intervention on accuracy of perception of personal risk for developing complications of hypertension, attitude and behavior change in men with hypertension.

There is also a need to further explore why information about risk of hypertension from healthcare providers has less influence on older men living with hypertension than the information from stories. In this study, I did not explore this phenomenon; thus, it is unclear what older men think about the risk information received from their healthcare providers. Moreover, researchers could explore healthcare providers’ experiences with and strategies used
for risk communication with older men with hypertension. Additional future directions include investigating the family’s influence on one’s personal sense of risk.

The ‘developing a personal sense of risk’ model also can be used to develop hypotheses and hypothesis testing regarding the relationship between a personal sense of risk and behavior change, which could then be replicated in other rural populations or with other chronic illnesses.
Reference


