

## **Factors affecting health literacy in hypertensive elder adults: an integrative review**

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### **Abstract**

Health literacy is defined as individuals' ability to access, understand, and assess health-related information to make health-related decisions. Health literacy in hypertension can be considered closely related to health outcome of hypertensive elder adults. Low health literacy negatively impacts people's health according to numerous studies. The purpose of this integrative review is to examine which factors mostly influence health literacy in hypertensive elder adults. Literature review based on integrative review was utilized in order to provide comprehensive view and understanding of the phenomenon. This review is based on studies extracted from three electronic databases (CINHAL, Science Direct and Google Scholar) between 1998 to 2020. Findings demonstrated that the factors that influence health literacy in hypertensive elder adults are age, gender, education levels, and knowledge of hypertension.

Nurses should promote the hypertensive elderly adults to increase health literacy by providing the following: 1) access to hypertension-related information and services, 2) knowledge and understanding of hypertension disease, 3) communication skills of hypertension health, 4) decision-making skills of hypertension lifestyle modification and behavior 5) Self-management skills of hypertension disease.

**Key words:** influencing factors, hypertension, health literacy, elderly

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## ปัจจัยที่มีผลต่อความฉลาดทางสุขภาพในผู้สูงอายุที่มีโรคความดันโลหิตสูง: การทบทวนวรรณกรรมเชิงบูรณาการ

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### บทคัดย่อ

ความฉลาดทางสุขภาพ หมายถึง ความสามารถของบุคคลในการเข้าถึงข้อมูลทางสุขภาพ มีความรู้ความเข้าใจในข้อมูลเกี่ยวกับสุขภาพเพื่อการตัดสินใจในการดูแลสุขภาพตนเองเพื่อคงไว้ซึ่งการมีสุขภาพดี ความฉลาดทางสุขภาพในโรคความดันโลหิตสูงนั้นสามารถพิจารณาได้ถึงผลลัพธ์ด้านสุขภาพของผู้สูงอายุที่มีโรคความดันโลหิตสูง การมีความฉลาดทางสุขภาพต่ำส่งผลเสียต่อสุขภาพของประชากรตามการศึกษาที่ผ่านมา การทบทวนวรรณกรรมเชิงบูรณาการนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีอิทธิพลต่อความฉลาดทางสุขภาพในผู้สูงอายุที่มีโรคความดันโลหิตสูง วิธีการทบทวนวรรณกรรมบนพื้นฐานการทบทวนวรรณกรรมแบบบูรณาการได้ถูกนำไปใช้ประโยชน์ในการพิจารณามุมมองอย่างครอบคลุมและทำให้เข้าใจในปรากฏการณ์นั้นๆ การทบทวนวรรณกรรมแบบบูรณาการครั้งนี้ได้สังเคราะห์จาก 3 ฐานข้อมูล (CINHAL, Science Direct และ Google Scholar) ระหว่างปี ค.ศ.1998 ถึง ปี ค.ศ.2020 ผลการทบทวนวรรณกรรมพบว่าปัจจัยที่มีอิทธิพลต่อความฉลาดทางสุขภาพในผู้สูงอายุที่มีโรคความดันโลหิตสูง ได้แก่ อายุ เพศ ระดับการศึกษา และ ความรู้ในเรื่องโรคความดันโลหิตสูง

พยาบาลควรส่งเสริมให้ผู้สูงอายุที่มีโรคความดันโลหิตสูงมีความฉลาดด้านสุขภาพเพิ่มขึ้นดังนี้ 1) การเข้าถึงข้อมูลสุขภาพและบริการที่เกี่ยวข้องกับโรคความดันโลหิตสูง 2) ความรู้และความเข้าใจในเรื่องโรคความดันโลหิตสูง 3) ทักษะการสื่อสารด้านสุขภาพเกี่ยวกับโรคความดันโลหิตสูง 4) ทักษะการตัดสินใจในการปรับเปลี่ยนพฤติกรรมสุขภาพเกี่ยวกับโรคความดันโลหิตสูง 5) ทักษะการจัดการตนเองเกี่ยวกับโรคความดันโลหิตสูง

**คำสำคัญ:** ปัจจัยที่มีอิทธิพล, โรคความดันโลหิตสูง, ความฉลาดทางสุขภาพ, ผู้สูงอายุ

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## Introduction

Health literacy has been defined as ability to access, understand, assess health-related information, is considered essential to make sound health decisions. It is also related to poor health outcomes, increased utilization of hospital care, and increased mortality.<sup>1</sup> Low health literacy is significantly associated with worse consequences of health care. The recent results showed that the health literacy had not changed significantly over the past decade in the United States.<sup>1</sup> A study in Thailand states that only 11 percent of subjects was found to have adequate health literacy and 51.5 percent marginal and 37.5 percent inadequate.<sup>2</sup> Low health literacy is related to health outcomes such as perceived health status.<sup>1</sup> The health-related quality of life of hypertensive person was significantly impacted by health literacy.<sup>3</sup> Lack of health- knowledge was the most common barrier to awareness of hypertension.<sup>4</sup>

## Method

The integrative review method is employed because it is the method which permits the inclusion of diverse methodologies whether they are experimental or non-experimental and has greater potentials with respect to evidence-based practice for nursing.<sup>5</sup> However, since the method is intended to combine various methodologies, the method

itself involves, to a great extent, complex nature, thereby possibly leading to less rigor, inaccuracy and bias.<sup>6,7</sup> The integrative review method in this paper followed the research method proposed by Cooper.<sup>8</sup> Problem identification is used by clearly identifying the problem and determining the variables. Through the integrative review, factors affecting health literacy in hypertensive persons were identified. The literature search was conducted with specific focus on the health literacy, hypertension and elderly. After using key words, health literacy in CINHALL database and Science Direct, articles were excluded if health literacy was mentioned as health education. By focusing the review, the number of relevant sources was reduced from a total of 87,189 to 25 studies. Data evaluation was conducted by integrative reviewing the final sample including empirical and theoretical reports. Empirical reports included various methods: cross-sectional, instrument development, cohort study. Data analyses were extracted based on sample characteristics and methods.

## Inclusion and exclusion criteria

The inclusion criteria are as follows. The following definitions were used to identify the keywords for searching articles including: 1) health literacy incorporates three important levels, which are functional health literacy,

interactive health literacy, and critical health literacy. 2) hypertensive persons are defined as people with hypertension aged from 35 to 59. 3) factors are defined as predictors of health literacy in hypertensive persons. The exclusion

criteria are as follows: The studies were published before 1998 in English and Thai language including health literacy and hypertension and both descriptive and experiments.

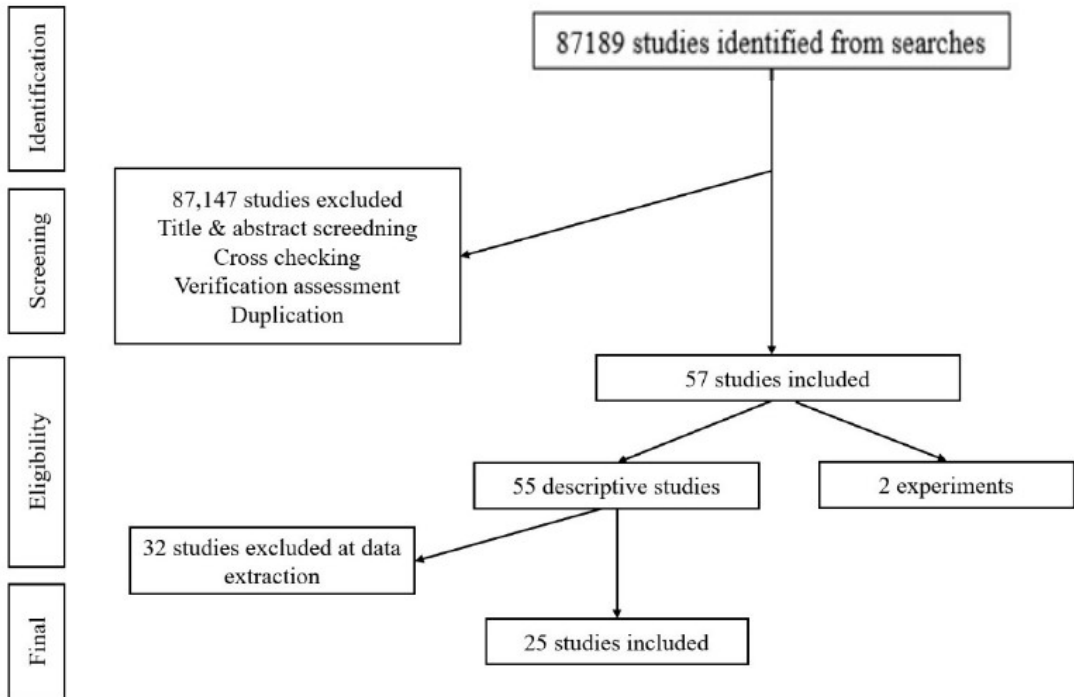


Figure 1 Literature review flow chart (Whittemore and Knaf)<sup>5</sup>

**Results**

**Concepts of health literacy**

As a result, 57 studies were initially identified as eligible. Among these studies, 55 were descriptive and 2 were experimental studies. Among 57 studies initially eligible, 32 studies including two experimental studies were

excluded at data extraction. Finally, 25 studies were selected for this review. There are three types of health literacy which are functional, interactive health literacy and critical health literacy.<sup>9</sup> Functional health literacy is related to individual's capability of literacy, numeracy and access to health-related information. Interactive

health literacy is individual's understanding and communication with health professionals<sup>10</sup>. Critical health literacy could be developed through education to critically appraise information related to health.<sup>9</sup> Conceptual model of health literacy<sup>10</sup> as a risk included the self-management and the conceptual model of health literacy as an asset contained both knowledge and self-management as the factors<sup>10</sup> consisting of following components: access to health-related information and services, understanding, communication skills, decision making skills, self-management skills, media literacy. Health literacy related to elderly adults with hypertension can be stated as functional, interactive and critical health literacy in terms of hypertension. In this regard, elderly adults with hypertension must possess literacy and numeracy as functional health literacy, communication skills as interactive health literacy and analysis skills as critical health literacy inducing behavior changes to better health outcomes in elderly adults with hypertension.

### **Factors influencing hypertensive health literacy**

The factors affecting health literacy in elderly with hypertension were categorized into 3 factors; demographic, social and economic factors. Demographic factors were age, gender and race. Social factors were education, marital

status and region. Economic factors were income and employment status. The factors most frequently mentioned in literature were age, education, and knowledge. According to selected 25 studies, 16 articles mentioned education. 8 studies identified age and 9 articles reported knowledge, while income, gender and race were found in 6 articles.

### **Demographic factors**

#### **Age and gender**

Among all demographic factors, age is the most potent factor influencing the health literacy. Older age was found to be associated with limited health literacy based on the analysis of Paasche-Orlow and Wolf.<sup>11-13</sup> In another study, age combined with other factors accounted for 33 percent of functional health literacy.<sup>15</sup> In addition, the functional health literacy was significantly lower among elder adults.<sup>15</sup> In a study conducted in South Korea<sup>16</sup>, the older the patients were, the less disease knowledge those patients had. In an Iranian study<sup>17</sup>, health literacy was significantly related to age ( $p < 0.001$ ). Age is considered one of the most dominant factors influencing health literacy. However, age was not the only factor that influences the health literacy in elderly adults with hypertension. In a study in Korea, the factors affecting the continuity of care were gender, other factors and Charlson's

comorbidity score.<sup>18</sup> The gender combined with other factors appeared to play a significant role as an influencing factor. Especially, minority or income factor seems to be related. Age was an effective factor when it was related with other factors especially gender.

## **Social factors**

### **Education and knowledge**

The knowledge positively affected compliance, and good compliance was associated with good blood pressure control.<sup>19</sup> In another study, health literacy was associated with education.<sup>13</sup> Limited health literacy was associated with lower levels of education and that there were significant paths from health literacy to knowledge ( $r=0.22$ ,  $P<0.001$ ) based on the analysis of Ingram<sup>11</sup> and Paasche-Orlow and Wolf.<sup>13</sup> In another study of health literacy among hypertensive adults,<sup>21</sup> hypertension knowledge could be entirely explained by health literacy. The health literacy was significantly related to education level ( $p<0.001$ ).<sup>17</sup> In a study conducted by Pongkiatchai<sup>21</sup>, education levels affected nutrition literacy which could be counted as health literacy among elder adults with hypertension. In China, hypertension knowledge was associated with marital status and education.<sup>22</sup> A systematic review showed that lack of knowledge was the most common barrier to hypertension awareness.<sup>4</sup> The utilization of

facilities was associated with education levels and knowledge.<sup>23</sup> In a study in Thailand, the factors that affected health literacy were education level and marital status ( $p < 0.05$ ).<sup>24</sup> Health literacy had a statistically significant relationship with practices to prevent hypertension ( $p < 0.05$ ). The higher education level the respondents had, the higher health literacy levels they showed.<sup>2</sup> Education and knowledge were among the most frequently mentioned factors in the literature review. The literature review revealed that limited or lower levels of health literacy was associated with lower educational levels and knowledge.

The study of health literacy in rural China<sup>22</sup> stated that hypertension knowledge was associated with marital status and education. In a study in Thailand, the factors that affected health literacy were education level and marital status ( $p < 0.05$ ).<sup>24</sup> Marital status was shown to be not as important as the other factors such as education and knowledge. However, combined with other factors such as education or knowledge, it appeared to have certain effects on health literacy.

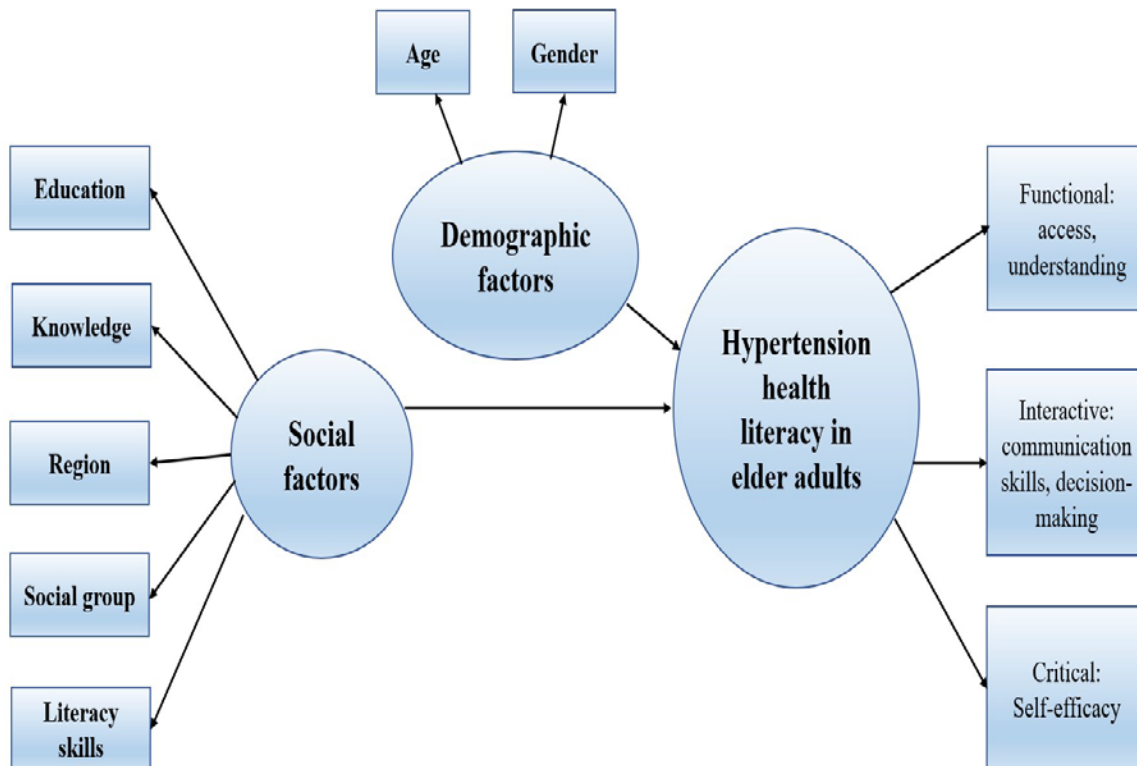
### **Region**

In the U.S., about 33% urban and 25% rural Indians were hypertensive and of these, 25% rural and 42% urban Indians were aware of their hypertensive status and only 25% rural

and 38% of urban Indians were treated for hypertension.<sup>25</sup> Among other social factors, region was not as important as the other social factors. It appeared that residents in rural areas

tended to have lower health literacy. Knowledge and education were the most potent factors influencing health literacy.

**Conceptual model**



**Figure 2** Conceptual model

**Conclusion and discussion**

Findings demonstrated that the factors influencing health literacy in hypertensive elder adults were age, gender, education levels, and knowledge of hypertension. The most dominant and frequently mentioned

factors influencing health literacy in hypertensive elder adults included age, education and knowledge. These findings suggested that nurses and nurse researchers should focus more on studying about health literacy among elder adults with hypertension.

Firstly, in terms of demographic factor, nurses should consider differences in ages, genders and contexts. Secondly, social factors such as education and knowledge, empowerment was important. Nurses should provide a) access to hypertension- related information and services b) knowledge and understanding of hypertension disease c) Communication skills of hypertension health. d) Decision-making skills of hypertension lifestyle modification and behavior. e) Self-management skills of hypertension disease. Nurse researchers and nurse administrators should make suggestions based on evidence to policy makers in order to improve health literacy in elder adults with hypertension at community or national levels to reduce inequity in health care.

### **Implementation and recommendations**

The findings can be used as a guideline for development of tools to measure the health literacy in hypertensive elder adults in Thailand. The potential contributions to nursing knowledge are as follows. Firstly, this review could be a guide for nurse practitioners to devise the best nursing practice guideline for nursing professionals to understand the factors such as age, gender, knowledge and education levels that help to classify the elderly hypertensive patients into groups in order to promote health literacy in elder adults with hypertension. Secondly, nurse educators and

researchers can apply the result as research utility to teach nursing students in practice related to health literacy in hypertensive elder adults. Lastly, the prospective studies or nurse administrator can make suggestions to policy makers to establish policies to improve health literacy in elder adults with hypertension at community or national level to improve equity in health care.

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