

# Conceptual Analysis of Self-Management in Patients with Hypertension

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**Abstract:** *Objective:* To clarify the concept of self-management in hypertensive patients by analyzing the definition, attributes, and measurement tools through a literature review. *Methods:* An Internet-based search of the databases was conducted using Academic Search Complete, Medical Line, CINAHL, Health Source: Nursing/Scholarly Edition, and Google Scholar. In the search process, keywords or free text were combined by using Boolean operators, with the search terms “self of management” or “self-management,” “concept\*analysis” or “concept\*definition,” and Walker and Avant’s concept analysis method was used. *Results:* Analysis of relevant literature summarized the conceptual attributes of self-management in hypertensive patients as the active participation of patients in the treatment process; the presence of interaction provided by patients and health care providers; the use of certain health management tools; and the aim of maintaining and improving the health status and living capacity of hypertensive patients. *Conclusion:* The concept of self-management for hypertensive patients was clarified, which helps to promote the application of hypertensive self-management in clinical work and improve outcomes and quality of life for patients with hypertension.

**Keywords:** Hypertension; Self-management; Concept analysis; Walker and Avant’s concept analysis method

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## 1. Introduction

Hypertension is one of the most common chronic diseases worldwide and is considered by the World Health Organization (WHO) as a group of diseases with a long and usually slow progression, the incidence of which has been on the rise <sup>[1]</sup>. The serious consequences of hypertensive disorders include transient ischemic attacks, congestive heart failure, etc., which cause 7.1 million deaths annually <sup>[2]</sup>. Moreover, the long treatment period and other characteristics lead to the consumption of a large number of medical resources and become a major burden of disease for the population <sup>[3]</sup>, and poorly controlled hypertension causes significant financial and emotional stress to patients and their families <sup>[3]</sup>. However, the long-term healthcare activities required by hypertensive patients usually take place in the community and at home, and in this situation, patients and

their family members inevitably become self-managers of the disease <sup>[4]</sup>. Therefore, some researchers have also applied theory-based approaches to help hypertensive patients to improve treatment adherence <sup>[1]</sup>. Self-management is a behavioral approach originated from the field of psycho-behavioral therapy. By reducing risk factors and controlling and managing the disease, self-management is widely used as an effective intervention in the management of patients with chronic diseases at home and abroad with satisfactory results <sup>[5-8]</sup>. Self-management includes hypertension management, while effective management of hypertension has been demonstrated <sup>[9]</sup>.

Self-management involves recording one's data, adjusting behavior accordingly, and applying treatment or seeking professional help <sup>[10]</sup>, and it requires building strong relationships between patients, healthcare providers, and families <sup>[11]</sup>. Self-management has three implications; firstly, this dynamic healthcare process requires monitoring of disease, behavioral, cognitive, and emotional developmental states to maintain a better quality of life. Secondly, self-management can promote the active participation of patients in community healthcare <sup>[12]</sup>. Thirdly, self-management can help patients increase their understanding and control of their illness, thereby reducing anxiety <sup>[13]</sup>. For example, although the concept of "self-management" is more common, there is no consistent definition and description of self-management <sup>[14]</sup>, and different terms are often used, including self-care, symptom management, self-treatment, self-tracking, and self-memory <sup>[4,14]</sup>. With the generation of new information, technologies, and paradigms, the delivery of healthcare services is changing and patients have more ways and resources to manage their health, which has led to changes in the definition and connotation of self-management. A conceptual analysis of self-management is necessary because of the confusion and ambiguity in the definition.

This study aimed to better understand the "self-management" of hypertension, clarify the conceptual content of hypertension self-management, and thus provide conceptual support for the development of self-management intervention programs and self-management measures. It facilitates the development and evaluation of continuity of care tools and provides better care for patients with hypertension.

## **2. Methods**

### **2.1. Study design**

The approach developed by Walker and Avant is generic and systematic <sup>[15]</sup> and has been effectively applied in the nursing field. Therefore, we chose the approach developed by Walker and Avant to conduct a conceptual analysis of hypertension self-management to clarify the concept of self-management in the context of hypertension, thus facilitating the promotion of hypertension self-management in clinical work.

### **2.2. Search strategy**

Conceptual analysis was performed by using a systematic literature search of databases based on the Internet: Academic Search Complete, Medical Line, CINAHL, Health Source: Nursing/Academic Edition, and Google Scholar. In the search process, keywords or free text were combined by using the Boolean operator "self-efficacy" or "self-management", and the search terms were "concept\*analysis" or "concept\*definition". The literature included in the scope was: (1) full text; (2) literature in English; (3) scholarly and peer-reviewed; (4) publications from 2017 to 2023; and (5) seminal and historically significant literature over five years. In addition, for a given search, the first search term is limited to articles listed in the title, while the second search term is displayed in the full text.

### 2.3. Data collection and analysis

Literature with hypertension self-management is the primary study, addressing the historical, defining attributes of the concept of self-management, moving duplication, time, and language limitations were assessed, and 1083 papers were identified. In addition, most of the studies had been peer-reviewed. Researchers independently assessed the content of the included literature and the results of the literature. The final 172 articles were excluded and 49 articles were included in the conceptual analysis, with exclusion criteria being: (1) not relevant to the concept of hypertension self-management; and (2) not relevant to the primary study objective.

The analysis was conducted by using Walker and Avant's conceptual analysis method, specifically eight steps: selecting a concept, defining purpose, identifying the concept, identifying and defining attributes, constructing a model case, constructing additional cases, identifying antecedents and outcomes, and defining empirical references <sup>[15,16]</sup>.

## 3. Results

### 3.1. Definition of self-management

In Chinese, the Contemporary Chinese Dictionary (CCD) defines "self" as "oneself" and "manage" as "to be in charge of a matter and make it or to take care of and discipline" <sup>[17]</sup>. The New Oxford English-Chinese Dictionary defines self-management as "to manage or be managed by oneself, to be responsible for one's behavior and well-being" <sup>[18]</sup>. Self-management is defined in the MeSH lexicon as "the ability of an individual to manage physical symptoms of illness, treatment, and psychological and life-change adaptations." Wechsler's dictionary explains self-management as "the active participation of patients in their own health care decisions and interventions. With the education and guidance of professional caregivers, patients promote their optimal health or recovery." It is defined as "the ability of an individual to manage the health status of physical symptoms, mental status, access to care, social lifestyle, cultural and spiritual consequences in the context of family, community, and health care" <sup>[19]</sup>. Also, self-management programs improve caregivers' self-concept, change their attitudes and behaviors toward symptoms, and reduce stress. Some studies consider self-management as a broad term that includes therapeutic adjustment, symptom management, and self-motivation <sup>[11]</sup>, enhancing caregivers' motivation to change caregiving behaviors, improving patients' quality of life, and promoting patients' health <sup>[20]</sup>. By searching the above definition of self-management, it can be defined as a dynamic and active process that includes self-efficacy, self-monitoring, self-regulation, active communication with healthcare providers, and active access to social support to help patients receive better healthcare interventions and manage their illness.

### 3.2. Use of the concept

Self-management indicates that individuals monitor, screen, and manage their actions and can be very helpful in organizing the workplace, increasing self-motivation, and improving program completion rates <sup>[21]</sup>. Self-management was first applied by Creer to imply the active participation of patients in their treatment and has been described for more than 40 years <sup>[22]</sup>, which is widely used in the health industry. In some literature, self-management and self-care are often used as synonyms, and later self-care was gradually referred to collectively as self-management <sup>[23]</sup>.

Self-management refers to "preventive and therapeutic health activities performed by individuals under the guidance of health care professionals" <sup>[24]</sup> and also refers to "the whole process of analyzing, predicting and preventing patients' health status and risk factors through some health management platforms or approaches <sup>[25]</sup>; actions taken by patients in terms of medication and treatment adherence, safety, event management, and lifestyle management".

In contrast, it was considered that self-management is a multifaceted capacity <sup>[26]</sup>. Building on the views of other researchers, Barlow proposed that self-management is the individual's ability to adapt to illness by managing symptoms, treatment, physiology, psychology, and social lifestyle changes. It was also stated that "self-management is essentially the identification of the most important health problems and information and then the use of self-management skills to solve these problems, such as problem-solving, decision making, and action skills" <sup>[27]</sup>.

Hypertension self-management facilitates patients to have a positive impact on disease management. Firstly, it can help patients identify chronic disease risk factors <sup>[11]</sup>. Secondly, it helps low-income patients by providing disease intervention modalities, which achieve good outcomes and reduce healthcare resources <sup>[28]</sup>. Thirdly, self-management is more likely to help patients lower their blood pressure than the standard model of care in healthcare facilities and is widely used in clinical practice <sup>[9]</sup>. Fourthly, in addition to having a positive impact on patients, self-management improves the self-concept of caregivers with illness, improves the quality of life of family caregivers, and reduces physical and mental stress <sup>[20]</sup>.

## **4. Defining attributes**

Defining attributes mainly identifies the main features that often appear and distinguishes other symbols of similar concepts. Through literature review analysis, conceptual attributes of hypertension self-management were summarized and proposed, which mainly included six definitions: (1) active participation in the healthcare process; (2) self-efficacy; (3) self-regulation; (4) self-monitoring; (5) active cooperation with health care providers; and (6) family support and social support.

### **4.1. Active participation in the healthcare process**

Patients maintain a positive attitude towards hypertension treatment, understand the importance of self-management for hypertension, and actively participate in all healthcare activities <sup>[12]</sup>.

### **4.2. Self-efficacy**

Self-efficacy refers to the belief in the ability to overcome all difficulties and confidence in all things. Changing aspects of patients' behavior and treatment compliance improves their physical and mental health, and improves patient self-management <sup>[29]</sup>.

### **4.3. Self-regulation**

Self-regulation is a part of self-management and includes the management of one's confidence in all aspects of life and the degree of belief in things, reducing negative behavioral habits and thus promoting more positive practical behaviors.

### **4.4. Self-monitoring**

Self-monitoring (SM) is an important component of chronic disease self-management <sup>[10]</sup> and includes both clinical interventions and home-based self-management. Managing a patient's health status in daily life encourages individuals to take care of themselves and their families <sup>[30]</sup>, and patients' willingness to self-monitor has a significant impact on their health outcomes <sup>[10]</sup>.

### **4.5. Active cooperation with healthcare providers**

Extensive involvement of the healthcare team in the healthcare of individual patients or groups can promote

active collaboration between patients and healthcare providers, improve treatment adherence, and facilitate self-management programs <sup>[12]</sup>.

#### **4.6. Social support**

There was a positive relationship between health literacy and social support recognition and availability <sup>[31]</sup>. Patients often seek peer support from social relationships to support and promote self-management, and good social support improves intervention of patient outcomes <sup>[32]</sup>.

### **5. Operational definition**

Self-management has been defined as a dynamic, two-way process that involves self-adaptation of the patient and support from others. Through the combined efforts of self-driven and external support, patient recovery can be facilitated.

### **6. Model case construction**

The purpose of constructing model cases is to provide clear real-life examples of the attributes, antecedents, and consequences of a concept that can express the application of this concept in the discipline. A typical case is a case that contains all the attributes of a concept and meets the defining characteristics of the concept <sup>[33]</sup>. For example: William is a 52-year-old male who has been smoking for 19 years. He has maintained a high salt and fat diet and stayed up all night every day. Three years ago, William was diagnosed with essential hypertension after a physical examination revealed high blood pressure. His doctor recommended that he attend regular outpatient health education programs, which are conducted by nurses to educate patients about chronic diseases and to guide them in managing their diseases well. William accepted these recommendations and participated in the health education activities (active participation). During the activity, the nurse advised and supported him in self-management by educating him on all aspects of disease precautions, such as diet, medication, exercise, and lifestyle habits. After the activity, William received a hypertension health education book from the nurse, which recorded the precautions and preventive measures for people with hypertension. After that, William decided that he must change his lifestyle to control his blood pressure. He began to read the health booklet daily and learned more about the impact of diet on blood pressure. He began to quit smoking and kept track of his daily salt intake, fat intake, etc. He not only reduced his salt intake when eating but also set up a healthy eating menu for himself. When William encountered precautions that he did not understand, he reached out to the doctors and nurses at the hospital and asked them to answer questions he was confused about (active collaboration with health care providers). William monitors his blood pressure daily (self-monitoring). He is confident in himself and believes that he can follow his treatment plan and control his blood pressure markers (self-efficacy). When William monitors his high blood pressure, he also worries about more serious complications due to poor blood pressure control, but he quickly adjusts his emotions and identifies factors that contribute to unstable blood pressure promptly. William believes he can manage and monitor his hypertension well and reduce complications (self-regulation). Every Monday and Friday, William shares his blood pressure indicators with his family and asks them to monitor it together. He also actively participates in health education activities to gain more knowledge about his health (social support). Healthcare providers also make regular follow-up phone calls. After a period, William has been able to independently develop a self-management plan and implement it carefully, and his blood pressure has now remained largely stable. The nurses assess that William has good self-management skills and that's why his blood pressure is well controlled. Now, William has quit smoking and has

adopted a healthy lifestyle.

## 7. Contrary case construction

Tom is a 60-year-old man who lives alone and was diagnosed with essential hypertension six years ago. Every year, he goes to the hospital two to three times. He went to the hospital last week, but the last time he went was six months ago (active participation failed). At that time, when Tom finished his visit, Tom's doctor only prescribed some medication and advised some precautions. Because Tom could not do better self-management, he often failed to monitor his blood pressure promptly (self-monitoring failed). Tom seldom communicated with his family and rarely participated in daily community-organized knowledge dissemination activities (social support failed). He believed that hypertension was an untreatable chronic disease, so there was no need to monitor his blood pressure by himself (self-efficacy failure). In his daily life, he felt that changing his diet would not be useful in recovering from the disease, and he continued to make no dietary adjustments, staying on a high salt and fat diet (self-regulation failure). When health care workers called Tom, he often did not answer the phone (failure of positive cooperation with health care providers), and therefore, there was no opportunity for home visits by doctors or health care workers. As a result, Tom had little communication with healthcare providers, no more opportunity to engage in treatment, and his health was deteriorating.

## 8. Antecedents

### 8.1. Occurrence of diseases

This concept was pre-validated before the event <sup>[15]</sup>. The concept of self-management can be divided into two parts. Firstly, from the patient's perspective, it involves managing the risk of chronic disease with multiple comorbidities, including the risk of death from cardiovascular disease, and addressing a lack of experience in disease management. Secondly, from the healthcare perspective, there are limitations within the health system <sup>[3]</sup>.

Hypertension is a chronic disease with long-term care, which is the main reason why it is difficult to treat <sup>[1]</sup>. Patients, especially those with low education and low income, often lack experience in post-discharge care <sup>[3]</sup>. As a result, they need long-term supervision and guidance from healthcare workers. Additionally, the shortage of medical staff has led to a limited and uneven distribution of healthcare resources. Establishing community and hospital linkages remains difficult, and healthcare services do not fully meet the needs of patients with long-term illnesses. These factors emphasize the importance of patient self-management.

Patients typically begin to consider self-management behaviors only when illness occurs. Healthcare professionals assist patients in self-management when they seek help. The severity and complications of the disease can also determine the patient's engagement in self-management behaviors <sup>[34]</sup>. The more severe the patient's perceived illness or symptoms, the more likely they are to adhere to self-management behaviors <sup>[35]</sup>. Additionally, a higher number of comorbidities correlates with a higher level of self-management <sup>[36]</sup>.

### 8.2. Willingness to self-manage

Healthy emotions are an important component of self-management in hypertensive patients, issues such as diminished physiological function, uncertainty about the prognosis of the disease, and concerns about becoming a burden to the family can easily lead to negative emotions, which can reduce the patient's willingness to self-manage <sup>[3]</sup>. Maintaining a good mood helps individuals and families to improve self-management and treatment adherence <sup>[37]</sup>. Some other studies have shown that, in addition to mood, self-efficacy is highly associated with self-management behavior change in patients with chronic diseases <sup>[38,39]</sup>, which can improve patients'

confidence in treating their diseases and is also an intrinsic motivation for patients to self-manage.

### **8.3. Ability to accomplish self-management**

Orem argued that knowledge and skills are required for the implementation of self-management behaviors, knowledge is necessary for the implementation of health-related behaviors, and it is difficult for patients to take correct self-management measures without the relevant knowledge and skills, even if they have the will to perform self-management behaviors. Disease knowledge is one of the main influencing factors in patients' self-management behaviors, which can affect the choice and persistence of behaviors, confidence, and correctness of behavior execution <sup>[40]</sup>.

### **8.4. A suitable environment for self-management**

It has been shown that social support is positively correlated with self-management behavior, and the higher the level of social support is, the better the patient's self-management behavior is <sup>[41]</sup>. Respect and understanding from family and friends positively influence patients' confidence building and enhance self-efficacy. It was also indicated that good social support helps patients acquire and master disease-related knowledge and skills, and eventually adopt better self-management behaviors <sup>[42]</sup>. Economic level and literacy are also major factors that influence patients' self-management behaviors <sup>[43,44]</sup>, which is because patients with higher economic levels have access to more medical resources and have more time and energy to manage their disease, while those with low income may be more concerned with economic survival rather than eating healthy food and controlling disease <sup>[45]</sup>. In contrast, patients with higher literacy levels are more willing to learn and acquire more health education knowledge and self-management skills.

## **9. Consequences**

Expected consequences of self-management of hypertension include: firstly, improvement in health status (control of disease, effective management of symptoms, and promotion of patient health); secondly, change in self-management behaviors (acceptance of disease, improved cognitive abilities, and adoption of healthier lifestyles); thirdly, reduction in the cost of disease (reduced caregiver burden, reduced readmissions, reduced dependence on the health system, and reduced health system costs); fourthly, personal development promotion (relief of stress and anxiety associated with chronic illness, better work-life balance, improved interpersonal relationships, enhanced social engagement, and improved quality of life) <sup>[46,47]</sup>.

Also, the outcome is an event generated by a concept <sup>[15]</sup>. There are two beneficiaries of continuous self-management: the patient and the care provider. Firstly, from the patient's perspective, self-management can improve the quality of life. This is because the patient will accept the advice and guidance of the physician and improve self-confidence in the course of disease treatment <sup>[48]</sup>, which can lead to increased self-efficacy and improved functional behavior. This situation improves one's health by monitoring blood pressure, adjusting diet and lifestyle habits <sup>[49]</sup>, identifying factors that affect blood pressure promptly, and reducing complications <sup>[10,48]</sup>. Secondly, healthcare providers can reduce the number of emergency visits, reduce the number of hospitalizations and the cost of medical supplies, improve good health care, and increase patient satisfaction. Finally, self-management can promote camaraderie between healthcare providers and patients. When healthcare providers guide hypertensive patients in self-management, they can enhance the level of communication and understanding between them, adjust treatment plans promptly according to patient's needs, and help patients manage themselves well. Thus, self-management can improve patients' conditions and increase patients' satisfaction.

## 10. Defining empirical references

Empirical references are “categories of actual phenomena that demonstrate the existence of the concept itself” [15]. Several empirical references on self-management already exist in the literature. The most common instrument to measure hypertension self-management is the Persian Hypertension Self-Management Questionnaire. This exploratory study was conducted in Tabriz, Iran in 2017. The Persian version of the self-management questionnaire for diabetic patients was modified with appropriate psychometric properties to assess self-management in hypertensive patients [50], but no study is currently available for translation. The Diabetes Self-Management Questionnaire consists of 40 items, which contain all attributes of self-management and were modified for hypertensive patients [9]. The original questionnaire was already subjected to certain constructs and therefore no further assessment of construct validity was required.

## 11. Middle-range theory

Derived from Bandura’s social learning theory, self-efficacy theory serves as a middle-range theory. As a component of many health education promotions, self-efficacy is defined as the outcome of one’s ability and beliefs about oneself to guide behavior. Research has shown significant differences in patients’ self-care competency scores when self-management is embedded in self-efficacy theory [1]. Self-management was originally used in the 1960s to indicate a person’s active involvement in the treatment of illness [22]. Later, the term self-management was frequently used by professionals working in health care categories or education. There are commonalities between these uses, and a comprehensive concept of self-management could improve the use of the term in these disciplines and, in turn, facilitate targeted programs or interventions [51]. Available evidence suggests that the theory improves self-care for people with hypertension [1].

## 12. Discussion

Self-management is a behavioral approach originated from the field of psycho-behavioral therapy. By reducing risk factors and controlling and managing the disease, self-management is widely used as an effective intervention in the management of patients with chronic diseases at home and abroad with satisfactory results [5-8]. Self-management includes hypertension management, while effective management of hypertension has been demonstrated [9]. However, despite evidence that sociodemographic characteristics, health attitudes, and self-efficacy are related and associated with patient adherence, few studies have explored the conceptual definition of self-management in hypertensive populations [52]. One study showed that the observed association of age with poorer adherence to dietary therapy and self-monitoring/self-care, as well as the former correlation was mediated by self-efficacy in performing self-management, which may be attributed to the time and effort required to perform self-management [52]. Another study reported that “not having enough time” may be a major barrier to self-management performance [53]. Thus, hypertensive patients may need more time and be more willing or likely to find it useful to engage in disease-related self-management [54]. Another study suggests that people with chronic illnesses have a more organized and predictable daily life. As a result, people with chronic conditions are more likely to incorporate regular self-monitoring or other self-care behaviors into their routine daily lives. Many management behaviors can be used as interventions to promote social support (e.g., through community care services and patient support groups), which may be effective in increasing adherence levels in this population. Similarly, patients’ health behaviors with family members/others may strongly influence the behaviors of their cohabitants, suggesting that interventions to educate patients’ cohabitants about the patient’s illness and encourage them to support patients’ self-management behaviors may improve patients’ adherence to



self-management<sup>[55]</sup>. When developing and implementing interventions designed to promote self-management adherence, such as caregiver-assisted programs or technology-based supports, the design, usability, and acceptability of the intervention should be carefully examined and considered around the definitions and dimensions of the self-management conceptual analysis. This is necessary to avoid unintended adverse effects on implementation or patient outcomes.

### **13. Conclusion**

This study used Walker and Avant's concept analysis approach to analyze the concept of hypertension self-management and showed that it has been widely used. The attributes of self-management were described in the study and the attributes, causes, and consequences were discussed. In summary, self-management emphasizes the need to maintain an ongoing relationship between the patient and the care team in health care treatment. When patients with hypertension lack experience with disease management, they need to receive guidance and support from healthcare professionals. During the implementation of care measures, ensuring that hypertensive patients can self-manage well provides patients with good health care, reduces their emergency or hospitalization rates, and improves their quality of life and satisfaction. In addition, the modified Persian hypertension self-management questionnaire is the most appropriate instrument to measure the attributes of hypertension self-management.

The results of this study will promote a deeper understanding and communication about health care, improve the understanding of hypertension self-management programs, have important implications for developing self-management measures, and guide better nursing practice and patient care. Whether the management effects of hypertensive patients with different personality background factors are consistent with self-efficacy theory needs to be further investigated.

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### **Disclosure statement**

The authors declare no conflict of interest.

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## Appendix 1. Search strategies

<b>Date</b>	<b>01/05/2023</b>	
Research topic	Conceptual Analysis of Self-Management in Patients with Hypertension	
Search strategy	Self-management	“self-management” or “self-efficacy” or “self of management”
	Concept	“concept” or “concept analysis” or “concept definition” or “conceptual analysis”
Limits	01/01/2017-01/01/2023	
	English	
	Full text	
	Peer reviewed	
Databases	Academic Search Complete	
	MEDLINE	
	CINAHL Complete	
	Health Source: Nursing/Academic Edition	
	Google	