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Analysis of the Concept of Self-Management in Hypertensive Patients

Galuh Iriantono, Reni Purwandari, Suzanna Amelia, Satriya Pranata, Siti Aisah, Aric Vranada

Department of Magister Keperawatan, Universitas Muhammadiyah Semarang, Indonesia

galuhiriantono@gmail.com

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Abstract

Hypertension is a chronic condition that increases the risk of cardiovascular morbidity and mortality. Self-management is an important strategy in controlling hypertension through the integration of health education, behavioral adaptation, socialpsychological support, and identification of patient barriers. This study aims to explore the concept of self-management in hypertensive patients through a literature review supported by case observations. This study employs a qualitative method, reviewing 20 articles published between 2024 and 2025 from major bibliographic databases. Data were analyzed thematically to identify patterns of antecedent factors, consequences, and self-management strategies, which were then compared with three real-life cases of hypertensive patients. Results indicate that high health literacy, strong family support, and adaptive lifestyle changes contribute to blood pressure control and improved quality of life. Conversely, resistance to behavioral change, denial of diagnosis, and low self-confidence are associated with uncontrolled hypertension. This study concludes that personalized interventions combining structured education, behavioral motivation, community engagement, technology utilization can strengthen self-management skills, optimize hypertension control, and reduce the disease burden in the community.

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Introduction

Hypertension is one of the non-communicable diseases whose prevalence continues to rise and is a leading cause of morbidity and mortality (Ben-Eltriki et al., 2022). This condition is often accompanied by comorbidities that impact quality of life and increase the risk of cardiovascular complications. In recent years, the concept of self-management has emerged as a key strategy for effective hypertension control.

Self-management involves setting measurable health goals, adopting healthy behaviors, and actively involving patients in decision-making regarding their care. This approach has been shown to improve well-being, reduce chronic pain, and enhance quality of life in various chronic conditions (McQuade et al., 2024). In hypertensive patients, self-management interventions facilitated by healthcare professionals, particularly nurses, have been shown to improve blood pressure control and reduce cardiovascular risk factors (Ivarsson et al., 2025).

However, adherence to self-management behaviors such as diet regulation, medication adherence, and physical activity remains low, with compliance rates of only around 29.4% in some studies (Kurnia et al., 2023; Muhe et al., 2025). These barriers are exacerbated by low health literacy, lack of social support, and limited access to resources.

According to the WHO, only 25% of hypertensive patients undergo therapy, and only 12.5% achieve optimal control (Sohn et al., 2021). This highlights a significant gap between clinical recommendations and real-world practice, particularly in low- and middle-income countries. Therefore, a comprehensive understanding of self-management, including its antecedents and consequences, is crucial for designing contextually relevant and effective interventions. Empowering self-management programs can improve patients' perceptions of their disease and how to manage it, thereby increasing adherence (Dietrich et al., 2024; Finkleman et al., 2020).

Self-management encompasses various behavioral strategies designed to actively involve patients in their decision-making and health practices, thereby improving health outcomes. Research indicates that self-management is a cornerstone in regulating blood pressure levels and reducing hypertension complications. For example, Al-Rousan et al. explain that patients in low- and middle-income countries tend to respond positively to self-management education, provided they are sufficiently informed about hypertension and self-care strategies (Al-Rousan et al., 2020). Similarly, Kurt and Gurdogan highlight that support systems significantly improve knowledge, adherence, and self-care behavior among individuals with hypertension, indicating that structured self-management interventions provide substantial benefits in patient autonomy and health literacy (Kurt & Gurdogan, 2022).

Overall, establishing a self-management framework appears essential for improving hypertension management outcomes across various populations. This study aims to explore the concept of self-management in hypertensive patients through a literature review compared with field case studies, thereby providing an applied perspective that supports clinical practice and health policy.

Method

This study uses a qualitative design based on a literature review combined with field case studies. Data sources were obtained from research articles relevant to the topic of self-management in hypertensive patients. The search was conducted through the Scopus, Web of Science, and Google Scholar databases using the keywords "self-management" and "hypertension patient" for the years 2024–2025.

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From the initial search results, 48 relevant articles were identified. Selection was conducted to eliminate duplicates and apply inclusion criteria, namely international-language publications discussing self-management in hypertensive patients. The selection process yielded 20 articles that met the criteria. The articles were systematically analyzed to identify themes, patterns, antecedents, and consequences of self-management.

The analysis was conducted using a thematic descriptive approach to integrate literature findings with field case study data. Case studies were selected to provide a contextual overview of the application of self-management in hypertensive patients. Data validity was maintained through cross-referencing between literature and critical evaluation of sources.

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Result and Discussion

1. Result

Table 1
From a literature review of 20 articles, the following related matters have been identified

No	Title	Summary
1.	The effects of smartphone apps expected in self-management for hypertension management	The rise in smartphone ownership has driven widespread adoption of health apps, including those for hypertension management. These apps have been shown to be effective in reducing weight and salt intake, while also helping improve blood pressure and
		increasing patient satisfaction. However, clinical inertia remains a barrier to optimal hypertension management. In practice, outpatient pharmacotherapy remains the primary approach to hypertension treatment.
2.	Self-management in young and middle-aged patients with hypertension: a systematic review and meta- synthesis of qualitative studies	This study synthesizes qualitative research findings on self- management in hypertensive patients, particularly in the young to middle-aged age group. The analysis yielded four main themes and ten subthemes describing the attitudes, motivations, and challenges faced by patients. The most significant challenges include low disease perception and barriers to doctor-patient interactions. Meanwhile, family responsibility emerged as a significant motivating factor for patients in implementing self-management. This study identified personalized barriers to hypertension self-
3.	Identifying personalized barriers for hypertension self-management from TASKS framework	management using the TASKS framework. Observations of eight patients revealed 69 barriers, with emotional and knowledge factors having the most significant impact on successful self-management. These findings underscore the importance of tailored interventions to address each patient's unique needs and circumstances.
4.	The effect of self-management program with tele-nursing based on the Roper-Logan-Tierney model on self-care of hypertensive patients: a randomized controlled trial	This study evaluated the effectiveness of telenursing in supporting self-management in patients with hypertension. Involving 60 patients from a cardiology outpatient clinic, participants were randomized to an intervention or control group. The intervention group received training in blood pressure management and ongoing support via telenursing. Results showed a significant difference in self-care management scores between the two groups, confirming the potential of telenursing as an effective support strategy.
5.	Health literacy and hypertension-related multimorbidity: unravelling the mediating role of self-management - insights from the lifelines cohort study	This study examines the influence of health literacy on the onset and progression of multimorbidity in hypertensive patients, by assessing the role of motivation and problem-solving skills as mediators of self-management. Results indicate that limited health literacy contributes to poorer health outcomes, while improved literacy and self-management skills have the potential to prevent the progression of multimorbidity. This review assessed self-management assessment tools for
6.	Self-management assessment tools for people with hypertension: a scoping review Factors associated with the level	hypertension patients by examining their content, reliability, and validity. Through a systematic search of nine databases, 41 studies reporting on 20 types of tools were identified. This synthesis provides a comprehensive overview of the instruments available to support self-management assessments in hypertension patients. This study evaluated factors influencing self-management in
7.	of self- management in elderly patients with chronic diseases: a pathway analysis	elderly patients with chronic illness, including psychological capital, family functioning, and sources of meaning in life. Using a convenience sampling method, data were collected from 355 patients at three community hospitals. Analysis showed that all

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Analysis of the Current Status of Self-Management Behaviors and Factors Affecting Self-Management in Elderly Empty Nesters with Comorbid Hypertension and Type Diabetes Mellitus, a Cross-Sectional Study From the Community

Effectiveness of self-management for hypertension patients and behavior changes in China: a systematic review and meta-analysis

The Problems and Needs of Self-Management Among Indonesian Older Adults With Hypertension: A Qualitative Study

Self-management education for hypertension, diabetes, and dyslipidemia as major risk factors for cardiovascular disease:
Insights from stakeholders' experiences and expectations

Shared decision making applied to self-management program for hypertensive patients: A scoping review protocol

Influence of intelligent management mode based on Internet of Things on self3. management ability and prognosis of elderly patients with hypertensive heart disease: An observational study

14. Hypertension Self-Management Among African American Adults

three factors significantly influenced patients' levels of self-management.

This study examined self-management in "empty nest" elderly individuals with hypertension and comorbid diabetes mellitus. Questionnaires administered to 385 community participants indicated low to moderate levels of self-management skills. Factors such as age, education level, and healthcare payment method influenced self-management. These findings emphasize the need for primary healthcare providers to prioritize disease monitoring and dietary management in this group.

Hypertension is a major health threat in China because it increases the risk of cardiovascular disease. This review analyzed 16 randomized controlled trials involving 8,652 participants to assess the effect of self-management strategies on blood pressure. Results showed that self-management interventions significantly reduced systolic and diastolic blood pressure compared to the control group. These findings strengthen the evidence that self-management is an effective approach to managing hypertension.

This study examines the challenges of hypertension management in older adults in Indonesia, focusing on issues and needs related to self-management. Data were obtained from 62 participants through interviews and focus group discussions, yielding eight key themes related to hypertension management. These findings provide important insights for developing community-based healthcare services that are more responsive to the needs of older adults.

Cardiovascular disease is a leading cause of premature death, making effective self-management education crucial for chronic disease control. This study explored the experiences and expectations of various stakeholders regarding self-management education, involving patients, healthcare professionals, and policymakers. Data were obtained through interviews and focus group discussions, yielding insights that can be used to design more relevant and sustainable education programs.

This scoping review investigates the role of self-management (SDM) in the management of patients with hypertension, using the Arksey and O'Malley framework and the Joanna Briggs Institute (JBI) methodology. A systematic search will be conducted across several databases to identify relevant studies. Collected data will be extracted and analyzed thematically, then presented in tabular form to map the existing evidence and identify research gaps.

Hypertensive heart disease is difficult to manage with medication alone, which often impacts patient compliance. This study assessed the impact of an intelligent management intervention on self-management skills in 150 elderly patients, divided into a control group and an observation group. The observation group received an intelligent management-based intervention, which was shown to improve blood pressure control and self-management skills compared to the control group.

Hypertension is a significant health problem in the African-American population, making self-management crucial for controlling blood pressure. This study profiled hypertension self-management (HTN-SM) behaviors in middle-aged to older African-American individuals, with a mean age of 63.04 years, using a self-report survey. Results indicated that many participants had uncontrolled blood pressure and low self-care maintenance

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Importance of self-management 15. interventions in hypertension patients: a scoping review

Does social support improve selfmanagement among rural hypertensive patients? An empirical analysis based on generalized propensity score matching

Health literacy and selfmanagement among middle-aged and young hypertensive patients: a parallel mediation effect of illness perception and selfefficacy

Relationship Between Self-Management and Quality of Life 8. of Hypertension Patients at Slempit Kedamean Community Health Center

Factors related to selfmanagement behavior among hypertensive patients in Hue city, Vietnam

The Relationship of Self-20. Management with Quality Lives of Hypertension Patients scores. These findings underscore the importance of effective HTN-SM facilitation to lower blood pressure in this group.

This review identified effective self-management strategies for patients with hypertension, using articles sourced from five databases following PRISMA guidelines. The search focused on original, full-text articles published in English. Results indicate that self-management interventions have a positive impact on blood pressure monitoring and medication adherence, confirming their role as an important approach in hypertension management.

This cross-sectional study examined the effect of social support on self-management in 1,091 hypertensive patients in rural Shanxi Province. Results showed low levels of social support, with an inverted U-shaped relationship between social support and self-management effectiveness. These findings emphasize the need to focus on vulnerable populations to enhance social support as an effort to optimize hypertension management.

Hypertension is common in young and middle-aged populations in rural China. This study examined the effect of health literacy on self-management in 338 hypertensive patients recruited through a multi-stage sampling method. Analysis showed that illness perception and self-efficacy mediated the relationship between health literacy and self-management, with a mean self-management score of 70.45 ± 11.36 . These findings indicate that improving health literacy may contribute to improving self-management abilities in hypertensive patients.

Hypertension is known as a "silent killer," and its complications can be prevented through effective self-management. Self-care interventions play a crucial role in reducing healthcare costs, while adopting healthy lifestyle changes is key to long-term hypertension management.

This study analyzed self-management behaviors in hypertensive patients at Hue University Hospital, focusing on influencing factors. Given that hypertension is a leading cause of morbidity and mortality worldwide, this research provides important insights for developing interventions that can improve adherence and effectiveness of disease management.

Hypertension, known as a silent disease, affects many individuals in Indonesia and often goes undetected until complications arise. This study, conducted in Pariaman City with 44 respondents, assessed the relationship between self-management and quality of life in hypertensive patients. The results showed a significant association between the two variables (P < 0.05), confirming that effective self-management contributes to improved quality of life for patients.

Use of the Concept

The use of the concept of self-management in hypertensive patients involves the integration of various domains, including education, behavior, social and psychological support, and the identification of barriers. This comprehensive and integrated approach is expected to significantly improve health outcomes for hypertensive patients. Education is a crucial domain in the self-management of hypertensive patients. The importance of tailored education to improve patients' understanding of their condition and reduce the risk of heart disease (Soleimani et al., 2024).

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Self-management for hypertensive patients includes behaviors such as diet management, medication adherence, and routine blood pressure monitoring. Research by Yun and Song shows that patients' adaptability to self-management behaviors is critical to the success of hypertension management programs (Yun & Song, 2024). Furthermore, social support plays an important role in hypertension self-management. Sinaga shows that factors such as social support and self-efficacy influence patients' ability to engage in effective self-management (Sinaga et al., 2025).

Antecendence and consequences factors

Self-management in hypertensive patients is influenced by multifactorial interactions between antecedent and consequent factors. One important predisposing factor for effective self-management is individual factors such as health literacy and psychological capital. For example, patients with higher health literacy demonstrate better adherence to their treatment regimens and exhibit proactive behavior in managing their health, including dietary adjustments and medication adherence (Liu et al., 2024). Additionally, the presence of supportive family functions has been identified as a critical psychological component that strengthens self-management capabilities in patients (Cong et al., 2024). Lack of awareness about hypertension, often referred to as the "silent disease," poses a significant barrier, as many patients are unaware of their condition until complications arise (Marni et al., 2024). Furthermore, the implementation of technology-based interventions, such as smartphone apps, can enhance self-management by providing patients with tools to monitor their health metrics and receive timely reminders for medication (Arabaci & Uysal Toraman, 2025; Jiang, 2024).

Effective self-management is highly significant, not only improving health outcomes but also quality of life. Better self-management behaviors are associated with better blood pressure control and lower risks of related complications, such as heart attacks and strokes (Tran et al., 2024). These patients often report higher quality of life scores and lower healthcare utilization due to fewer hospitalizations (Marni et al., 2024). Additionally, effective self-management can foster a sense of autonomy and empowerment among patients, encouraging long-term engagement in health-promoting behaviors (Yun & Song, 2024). On the other hand, inadequate self-management often leads to poor health outcomes, including increased morbidity and mortality rates, necessitating comprehensive educational strategies to reduce these risks (Sinaga et al., 2025). Overall, addressing both the antecedents and consequences of self-management in hypertension can provide insights for health practice and interventions, ultimately optimizing patient health outcomes.

Conceptual models, as well as antecedent and consequence factors, explain the characteristics of each. Environmental realities, literature, and authorial engineering can provide examples (Walker & Avant, 2019). The following is a real-world comparison of a case model based on direct observations of hypertensive patients, and it is known that;

Case 1

Mr. D, a 65-year-old retired civil servant in Yogyakarta, has suffered from hypertension for approximately 10 years without any significant initial complaints. Before retirement, he worked with a busy schedule and high stress levels, but did not smoke. He regularly engaged in physical activities, particularly tennis, and now spends his time gardening. The patient lives with his wife, daughter, and son-in-law, following a daily routine that includes morning prayers, reading the Quran, tending to plants, playing

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tennis three times a week, and taking an afternoon nap. Health checks are conducted monthly at the primary health care center (FKTP) for referral extension to the government hospital, with antihypertensive and cholesterol-lowering therapy. The patient monitors his blood pressure daily using a digital sphygmomanometer at home. His weight is stable (65 kg, height 165 cm, waist circumference 88 cm), and he maintains a low-fat, low-coconut milk, low-salt, and low-oil diet.

The family actively supports treatment through medication reminders, emotional support, and motivation. The patient also regularly attends monthly elderly health posts for health checks, consultations, education, and social interaction, which expand his knowledge about hypertension. With adherence to medical recommendations—including a healthy diet, regular physical activity, avoiding smoking, and stress management—the patient's blood pressure is now controlled below 140/90 mmHg, an improvement from 160/90 mmHg at diagnosis. This case reflects self-integrity, self-regulation, engagement with healthcare providers and family, self-monitoring, adherence to medical guidelines, lifestyle modifications, community health participation, and stress management through social, spiritual, and recreational activities.

Case 2

Mr. A, 50 years old, was diagnosed with hypertension one year ago at the community health center. Prior to diagnosis, he had an unbalanced diet, did not exercise, and did not engage in regular physical activity. Currently, he weighs 80 kg, is 165 cm tall, and has a waist circumference of 93 cm. He has a smoking habit that is difficult to quit, and despite knowing his diagnosis, he has not made lifestyle changes such as maintaining a balanced diet, exercising, or quitting smoking.

Mr. A lives with his wife and two children, has been unemployed since being laid off at the beginning of the year, and helps his wife sell groceries at home. He received a diagnosis of hypertension, undergoes monthly check-ups, and understands the disease and its risks. His child gave him a digital blood pressure monitor, but he does not use it. The patient adheres to taking medication from the community health center, but continues to consume high-fat and high-sodium foods and smoke. His blood pressure consistently remains above 140/90 mmHg. Family efforts to remind him are often met with anger, making behavioral changes difficult to achieve.

Case 3

Mrs. B is 55 years old, 150 cm tall, and weighs 70 kg. Since she was young, she has enjoyed salty, sweet, and fatty foods. Currently, Ms. B is not working and stays at home. She is divorced from her husband and currently lives with her only child, grandchild, and son-in-law. Ms. B resides in Village K, where a health screening was conducted earlier this year in collaboration with the community health center. The results showed that her blood pressure was 170/90 mmHg, and she did not report any symptoms.

Her BMI was also over 25, indicating obesity. The examining doctor referred Mrs. B to the health center for treatment, but she refused the referral and declined to take the prescribed medication, as she felt no symptoms. The nurse provided education on hypertension, including its definition, symptoms, treatment, care, and complications that may arise if blood pressure is uncontrolled. Months passed, but Mrs. B still refused to go to the health center or hospital for check-ups because she felt healthy and fine. She did not maintain a healthy diet and never engaged in physical activity or exercise. Mrs. B always denied that she had been diagnosed with hypertension. Her family also closed

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themselves off when health workers came to their home to conduct home visits and measure blood pressure.

2. Discussion

A literature review indicates that successful self-management of hypertension requires the integration of health education, healthy behaviors, social-psychological support, and recognition of the barriers faced by patients (Sinaga et al., 2025; Soleimani et al., 2024; Yun & Song, 2024). Case analysis shows that Mr. D represents a comprehensive application of these concepts, with good health literacy, adherence to pharmacological therapy, dietary management, regular physical activity, and consistent family and community support. This aligns with the findings of Liu et al. (2024) dan Cong et al. (2024) that health literacy and supportive family functions are important precursors in self-management. Conversely, Mr. A and Mrs. B demonstrate suboptimal self-management. Mr. A, despite understanding hypertension, does not make lifestyle changes, while Mrs. B experiences denial of diagnosis and refuses medical intervention. Both reflect low motivation for behavioral change and psychological and social barriers hindering self-management, as reported by Marni et al. (2024).

From the perspective of antecedents and consequences, Mr. D experienced positive consequences in the form of controlled blood pressure and maintained quality of life, consistent with literature indicating that effective self-management reduces the risk of cardiovascular complications (Tran et al., 2024). Conversely, Mr. A maintained smoking habits and a high-salt, high-fat diet, while Mrs. B neglected health monitoring and physical activity, placing both at high risk for complications from uncontrolled hypertension. Mr. A's case demonstrates adequate health literacy but lacking self-efficacy, while Mrs. B's case highlights barriers at the diagnosis acceptance stage. Both profiles underscore the need for personalized educational interventions, behavioral motivation strategies, and family- and community-based approaches to address resistance or refusal to treatment. These findings highlight the relevance of the self-management conceptual model to real-world conditions, while also indicating that its successful implementation depends heavily on psychosocial factors and environmental support.

In the context of hypertension management, self-management is a concept that involves the integration of various domains, including education, behavior, social support, and identification of barriers, all of which are important for improving the health outcomes of hypertensive patients. Education is the most crucial domain. Research indicates that education tailored to patients' needs can enhance understanding of hypertension and contribute to reducing the risk of heart disease (Marni et al., 2024; Soleimani et al., 2024).

Additionally, self-management behaviors, including diet management, medication adherence, and regular blood pressure monitoring, play a significant role in the successful management of hypertension (Sinaga et al., 2025; Yun & Song, 2024). Research by Yun and Song revealed that patients' adaptability to self-management behaviors significantly influences not only their adherence to treatment regimens but also their ability to adopt healthier lifestyles (Yun & Song, 2024).

Social support also plays a vital role in self-management for hypertensive patients. Sinaga highlights that social support factors and self-efficacy significantly influence patients' ability to actively participate in their health management (Sinaga et al., 2025). Interventions designed to enhance this support can create significant positive changes in patient behavior. Individual factors, such as higher health literacy, also contribute to the

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effectiveness of self-management, with patients who are well-informed demonstrating better adherence to treatment and proactive behavior (Liu et al., 2024). However, barriers such as lack of awareness of hypertension, often referred to as the "silent disease," remain a major challenge in hypertension management (Marni et al., 2024).

Furthermore, the use of technology, such as smartphone applications, has been shown to improve self-management by facilitating self-monitoring of health and reminders for medication (Arabaci & Uysal Toraman, 2025). Given that effective self-management not only improves health outcomes but also enhances patients' quality of life, it is clear that meaningful self-management can reduce the risk of serious complications, such as heart attacks and strokes (Tran et al., 2024). On the other hand, inadequate self-management can lead to serious consequences, such as increased morbidity and mortality rates, emphasizing the need for comprehensive educational strategies to address these risks (Sinaga et al., 2025). Thus, a comprehensive understanding of the antecedent factors and consequences of self-management is essential in designing effective health interventions for hypertensive patients.

Field findings from the three analyzed cases demonstrate both alignment and gaps with the theoretical self-management model outlined in the literature. Mr. D's case validates the concept that a combination of good health literacy, consistent family support, and behavioral adaptability can lead to optimal blood pressure control. Conversely, the profiles of Mr. A and Mrs. B reveal that while basic knowledge about hypertension may be present, psychosocial barriers such as low self-efficacy, denial of diagnosis, and resistance to behavioral change can hinder the effective implementation of self-management. Thus, field observations not only confirm the relevance of antecedent and consequence factors in theory but also highlight the need for intervention adaptation to be more contextual, personalized, and sensitive to patients' socio-cultural dynamics.

Conclusion

This study confirms that self-management is a crucial component in effective hypertension management, with success greatly influenced by the integration of health education, healthy behavior, social-psychological support, and the identification and management of patient barriers. Literature reviews indicate that adequate health literacy, family support, and adaptability to lifestyle changes significantly contribute to blood pressure control and the prevention of cardiovascular complications. Case study analysis confirms these findings: Mr. D demonstrated optimal self-management with good clinical outcomes, while Mr. A and Mrs. B represented challenges such as resistance to behavioral change, low self-efficacy, and denial of diagnosis, which led to uncontrolled blood pressure.

These findings underscore the need for personalized interventions combining structured health education, behavioral motivation strategies, and family and community support. This approach aims not only to lower blood pressure but also to improve the quality of life for hypertensive patients. Additionally, the use of health technology and the active involvement of healthcare professionals, particularly nurses, are potential strategies to strengthen patients' skills and commitment to self-management. By optimizing antecedent factors and mitigating negative consequences, self-management programs can contribute to sustainable hypertension control and reduce the disease burden in the community.

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