

Knowledge Level and Self-Management Among Adults with Hypertension in Primary Healthcare: A Cross-Sectional Study

Mohammad Reyhan Difa Taufiqurrahman, Luluk Cahyanti, Sri Hartini,
Renny Wulan Apriliyasari*

Institut Teknologi Kesehatan Cendekia Utama Kudus, Indonesia

*Corresponding Author: rennywulanapriliyasari@gmail.com

Abstract. Hypertension is one of the leading chronic diseases worldwide and a major contributor to cardiovascular morbidity and mortality. Effective self-management is essential for controlling blood pressure and preventing complications, and patients' knowledge plays a fundamental role in supporting self-management behaviors. This study aimed to examine the relationship between knowledge level and self-management among adults with hypertension in the working area of Dawe Primary Health Center. A quantitative cross-sectional study was conducted involving 33 adult patients with hypertension selected using a total sampling technique. Knowledge level and self-management were assessed using standardized questionnaires, and the data were analyzed using Spearman's rank correlation test. The analysis revealed a very strong positive correlation between knowledge level and self-management ($r = 0.912$, $p < 0.001$), indicating that patients with higher levels of knowledge demonstrated better self-management practices. Knowledge level was significantly associated with self-management among adults with hypertension. These findings highlight the importance of strengthening educational interventions to improve patients' knowledge and support effective hypertension self-management in primary healthcare settings.

Keywords: Adult, Hypertension, Knowledge, Self-Management

INTRODUCTION

Hypertension is one of the most prevalent non-communicable diseases worldwide and remains a major public health challenge. The increasing prevalence of hypertension has become a global concern because it is closely associated with serious cardiovascular complications, including stroke, coronary heart disease, kidney failure, and premature mortality. According to the World Health Organization (WHO), more than one billion people worldwide are living with hypertension, and its prevalence continues to increase, particularly in low- and middle-income countries (World Health Organization, 2023).

In Indonesia, hypertension also represents a significant healthcare burden. The 2023 National Basic Health Research (Riskesdas) reported a national hypertension prevalence of 30.8%, with Central Java being one of the provinces contributing substantially to the total number of cases. Kudus Regency, particularly the Dawe District, continues to report a considerable number of patients receiving hypertension management through primary healthcare services. As the first level of healthcare, Dawe Primary Health Center plays an essential role in preventing hypertension-related complications through continuous disease management and patient education (Ministry of Health of Indonesia, 2023). However, successful hypertension management depends not only on pharmacological treatment but also on patients' active participation in managing their own health (Smeltzer & Bare, 2020).

Self-management has become one of the fundamental components of long-term hypertension care. It includes adherence to prescribed medication, dietary modification, regular physical activity, stress management, and routine blood pressure monitoring. Effective self-management enables patients to maintain blood pressure control and reduce the risk of long-term complications. Among the factors influencing self-management, knowledge plays a pivotal role. Patients with adequate knowledge are generally more capable of understanding their disease, recognizing the importance of treatment adherence, and adopting healthier lifestyles. Conversely, inadequate knowledge may contribute to poor treatment adherence and unhealthy behaviors, ultimately leading to poorer disease control (Notoatmodjo, 2020).

Previous studies have consistently reported that patients' knowledge is positively associated with self-management among individuals with hypertension. Most of these studies, however, have focused on elderly populations or were conducted during specific circumstances, such as the COVID-19 pandemic (Cahyani, 2021; Gusty, 2022). Although these findings provide valuable evidence, limited

attention has been given to adults of productive age, who face different lifestyle patterns, occupational responsibilities, and health-related challenges that may influence their self-management behaviors.

Understanding the relationship between knowledge and self-management among adults with hypertension is particularly important because this population remains vulnerable to long-term complications while simultaneously carrying substantial family, occupational, and social responsibilities. Evidence from this group may provide valuable insights for developing more targeted health education programs within primary healthcare settings. Therefore, this study aimed to examine the relationship between knowledge level and self-management among adult patients with hypertension in the working area of Dawe Primary Health Center.

METHODS

This study employed a quantitative descriptive correlational design with a cross-sectional approach. The study was conducted in June 2025 at Dawe Primary Health Center, Kudus Regency, Indonesia. The study population consisted of adult patients with hypertension who routinely attended the primary health center for hypertension management.

A total sampling technique was employed, resulting in 33 eligible participants. The inclusion criteria were adults aged 18–60 years, diagnosed with hypertension, and willing to participate in the study. Knowledge level was measured using the Hypertension Knowledge-Level Scale (HK-LS), while self-management was assessed using the High Blood Pressure Self-Care Profile (HBP-SCP). Both instruments have demonstrated acceptable validity and reliability in previous studies.

Descriptive statistics were used to summarize respondents' characteristics and study variables. The relationship between knowledge level and self-management was analyzed using Spearman's rank correlation test. Statistical significance was established at $p < 0.05$. This study was approved by the Health Research Ethics Committee of Institut Teknologi Kesehatan Cendekia Utama Kudus, Indonesia (Ethical Approval No. 36/EC/KEPITEKES-CU/VI/2025). Written informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose of the study, the voluntary nature of their participation, the confidentiality of their information, and their right to withdraw from the study at any time without penalty.

RESULTS AND DISCUSSION

Table 1 presents the demographic characteristics of the respondents. The majority had completed secondary education (66.7%), while 24.2% had higher education and only 9.1% had primary education. Regarding occupation, most respondents were private-sector employees (33.3%), followed by housewives (30.3%), civil servants (15.2%), traders (12.1%), and farm laborers (9.1%). In terms of age, most participants were classified as young adults (18–40 years), accounting for 72.7% of the total sample. Overall, the respondents represented a predominantly productive-age population with relatively stable educational and occupational backgrounds, factors that may influence their ability to understand health information and engage in hypertension self-management.

Table 1. Frequency Distribution of Respondents' Characteristics Based on Education, Occupation, and Age in the Working Area of Dawe Public Health Center (n=33)

Characteristics	Frequency	Percentage (%)
Education		
Primary	3	9,1
Secondary	22	66,7
Higher	8	24,2
Total	33	100
Occupation		
Private Employee	11	33,3
Trader	4	12,1
Buruh Tani	3	9,1
Civil Servant	5	15,2
Housewife	10	30,3
Total	33	100
Age		
Young Adult (18-40)	24	72,7
Middle Adult (41-60)	9	27,3

Total	33	100
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As shown in Table 2, respondents with higher knowledge levels generally demonstrated better self-management practices. Spearman's rank correlation analysis revealed a very strong positive correlation between knowledge level and self-management ($r = 0.912$, $p < 0.001$). These findings indicate that patients with greater knowledge regarding hypertension were more likely to perform effective self-management behaviors.

The present study demonstrated a significant positive relationship between knowledge level and self-management among adults with hypertension. This finding suggests that knowledge is an important determinant of patients' ability to manage hypertension independently. Individuals with adequate knowledge are more likely to understand the importance of medication adherence, dietary modification, regular physical activity, blood pressure monitoring, and lifestyle modification, all of which are essential components of effective hypertension management.

Table 2. Distribution of Analysis Results on the Relationship Between Knowledge Level and Self-Management Among Adult Hypertension Patients in the Working Area of Dawe Public Health Center (n=33)

Adult Hypertension Patients in the Working Area of Dawu Public Health Center (n=33)									
Knowledge Level	Self-management						Total	r Value	P Value
	Good		Moderate		Poor				
	f	%	f	%	f	%			
Good	12	100.0	0	0.0	0	0.0	12	.912	< .001
Moderate	2	11.1	16	88.9	0	0.0	18		
Poor	0	0.0	0	0.0	3	100.0	3		
Total	14	42.4	16	48.5	3	9.1	33		

One possible explanation for these findings is that knowledge provides individuals with the cognitive foundation necessary to understand their health condition and make appropriate decisions regarding disease management. Patients who possess adequate knowledge are generally better equipped to recognize the consequences of uncontrolled hypertension, understand the benefits of treatment adherence, and implement healthy behaviors consistently. Consequently, improved knowledge facilitates the development of effective self-management behaviors that contribute to better disease control and reduce the risk of long-term complications.

The demographic characteristics of the respondents may also have contributed to the observed findings. Most participants were young adults aged 18–40 years, an age group generally characterized by optimal cognitive function, greater independence in decision-making, and higher adaptability to behavioral change (Santrock, 2019). Furthermore, the majority had completed secondary education and were formally employed. Educational attainment is closely associated with an individual's ability to obtain, process, and apply health-related information, whereas formal employment may facilitate access to health information, structured daily routines, and social support, all of which can positively influence self-management behaviors (Rahmawaty *et al.*, 2024; Wawan & Dewi, 2019).

The findings of this study are consistent with previous research demonstrating that knowledge plays a significant role in improving self-management among patients with hypertension. Cahyani *et al.* (2021) reported that patients with better knowledge exhibited more effective self-care management during the COVID-19 pandemic. Likewise, Satyal *et al.* (2020) found that hypertensive patients with higher knowledge levels showed better medication adherence and healthier lifestyle practices. Similarly, Fernalia and Putra (2021) emphasized that knowledge, together with self-efficacy and personal values, significantly influences self-care management among patients with hypertension. Collectively, these findings strengthen the evidence that knowledge is a fundamental prerequisite for successful hypertension self-management across different healthcare settings.

From a theoretical perspective, the present findings are supported by Orem's Self-Care Deficit Nursing Theory, which emphasizes that individuals possess the capacity to perform self-care activities through self-care agency, including knowledge, motivation, and practical skills (Hartweg & Metcalfe, 2022). Adequate knowledge enhances patients' ability to recognize symptoms, evaluate health risks, make informed decisions, and independently perform self-care activities. Consequently, strengthening patients' knowledge may improve their capacity to manage hypertension more effectively and consistently.

These findings are also consistent with health behavior theory proposed by Notoatmodjo (2020), which states that knowledge forms the basis for behavioral change. Individuals who understand the

causes, consequences, and prevention of disease are more likely to adopt healthy behaviors. In the context of hypertension, adequate knowledge encourages patients to comply with treatment recommendations, maintain healthy lifestyles, and actively participate in long-term disease management. Therefore, improving patients' knowledge should be considered an essential component of hypertension management programs in primary healthcare settings.

From a practical perspective, the findings of this study highlight the importance of strengthening health education as an integral component of hypertension management in primary healthcare. Educational interventions should not only provide information regarding hypertension but also improve patients' confidence and practical skills in implementing self-management behaviors in their daily lives. Educational strategies tailored to patients' educational backgrounds and daily activities may further enhance the effectiveness of these interventions. Moreover, collaboration among healthcare professionals, families, and communities is essential to establish a supportive environment that encourages sustainable self-management practices.

Despite the promising findings, this study has several limitations. The cross-sectional design does not permit causal inference between knowledge and self-management. Furthermore, the relatively small sample size and single-center setting may limit the generalizability of the findings to broader populations. Future studies involving larger multicenter samples are recommended to confirm these findings and to explore additional factors influencing self-management, such as health literacy, self-efficacy, family support, and technology-based educational interventions.

This study has several limitations. First, the cross-sectional design does not permit causal inferences between knowledge level and self-management; therefore, the findings should be interpreted as an association rather than a cause-and-effect relationship. Second, the study involved a relatively small sample from a single primary healthcare center, which may limit the generalizability of the findings to other populations. Third, data were collected using self-reported questionnaires, which may be susceptible to response bias. Finally, this study examined only knowledge level as a determinant of self-management, while other potentially influential factors, including self-efficacy, family support, health literacy, duration of hypertension, and comorbidities, were not investigated. Future studies involving larger multicenter populations and broader explanatory variables are recommended to provide a more comprehensive understanding of factors influencing hypertension self-management.

CONCLUSION

This study demonstrated a significant positive relationship between knowledge level and self-management among adults with hypertension in the working area of Dawe Primary Health Center. Patients with higher levels of knowledge were more likely to demonstrate better self-management behaviors, highlighting the important role of knowledge in supporting effective hypertension management.

These findings emphasize the need to strengthen patient education as an integral component of hypertension management in primary healthcare settings. Educational interventions should not only improve patients' understanding of hypertension but also encourage the adoption of sustainable self-management behaviors to reduce the risk of complications. Future studies involving larger and more diverse populations are recommended to validate these findings and explore additional factors influencing self-management among patients with hypertension.

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