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HYPERTENSION KNOWLEDGE AND SELF-MANAGEMENT AMONG OLDER ADULTS AT GROGOL COMMUNITY HEALTH CENTER

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ABSTRAK

Hipertensi merupakan masalah kesehatan global dengan prevalensi tinggi dan risiko komplikasi serius. Lansia merupakan kelompok rentan dengan prevalensi hipertensi mencapai 34,1% pada populasi lansia Indonesia. Penelitian ini bertujuan menganalisis hubungan tingkat pengetahuan dengan *self-management* pada lansia penderita hipertensi di wilayah Puskesmas Grogol. Penelitian menggunakan desain cross sectional dengan sampel 382 lansia hipertensi berusia ≥ 60 tahun yang dipilih melalui cluster random sampling. Instrumen penelitian telah teruji validitas (Pearson Product Moment) dan reliabilitas (Alpha Cronbach 0,807 untuk pengetahuan; 0,817 untuk *self-management*). Hasil penelitian menunjukkan distribusi tingkat pengetahuan: baik 16,2%, cukup 51,0%, kurang 32,7%; dan *self-management*: baik 4,7%, cukup 77,2%, buruk 18,1%. Uji Chi-Square menunjukkan hubungan signifikan antara pengetahuan dengan *self-management* (χ^2 = 40,251; *p* = 0,001) dengan kekuatan hubungan lemah hingga sedang (Cramer's V = 0,229). Temuan ini menyatakan bahwa diperlukan penguatan edukasi kesehatan agar pengelolaan hipertensi dapat lebih optimal.

ABSTRACT

Hypertension Knowledge and Self-Management Among Older Adults at Grogol Community Health Center. Hypertension is a global health problem with high prevalence and serious complication risks. The elderly are a vulnerable group, with a prevalence of hypertension reaching 34.1% in the Indonesian elderly population. This study aims to analyze the relationship between knowledge levels and self-management in elderly people with hypertension in the Grogol Community Health Center area. The study used a cross-sectional design with a sample of 382 elderly people with hypertension aged ≥ 60 years selected through cluster random sampling. The research instruments had been tested for validity (Pearson Product Moment) and reliability (Cronbach's Alpha 0.807 for knowledge; 0.817 for self-management). The results showed the distribution of knowledge levels: good 16.2%, adequate 51.0%, poor 32.7%; and self-management: good 4.7%, adequate 77.2%, poor 18.1%. The Chi-Square test showed a significant relationship between knowledge and self-management (χ^2 = 40.251; p = 0.001) with a weak to moderate strength of relationship (Cramer's V = 0.229). These findings indicate that health education needs to be strengthened so that hypertension management can be more optimal.

INTRODUCTION

Hypertension is a condition in which blood pressure exceeds the normal limits, with systolic and diastolic values of ≥ 140/90 mmHg after repeated measurements.[1] The World Health Organization estimates that there are 1.13 billion hypertensive patients worldwide, mostly in low-

and middle-income nations, and that by 2025, there will be roughly 1.5 billion deaths from the condition.[2] The number of cases has doubled from 650 million in 1990 to 1.3 billion in 2019, according to the WHO Global Report 2023, and it results in 10.8 million avoidable deaths annually. According to basic health research, the prevalence of hypertension in Indonesia was 34.1%,[3] with Central Java coming in fourth place with 37.57% and Sukoharjo with 5.84%. Grogol Subdistrict emerged as the area with the greatest number of cases (28,246).[4] The risk rises with age as a result of arteriosclerosis, which is a natural aging process.[5]

In addition to causing symptoms like lightheadedness, tightness, chest pain, or nosebleeds, untreated hypertension can lead to complications like heart failure and stroke.[6] Knowledge of the definition, causes, prevention, and diet for people with hypertension is an important factor in hypertension prevention and management. Hypertension is managed through periodic blood pressure checks, a balanced diet, and increased physical activity.[7] Knowledge has a significant impact on health behavior because it serves as the foundation for the development of consistent actions. Knowledge is a fundamental domain that has a significant influence on health behavior because it serves as the foundation for developing consistent and long-term actions. The Health Belief Model suggests that adequate knowledge helps individuals understand their susceptibility to disease, the severity of the condition, and the importance of preventive measures. A high level of knowledge fosters positive beliefs and attitudes, leading to optimal self-management practices for the older adults with hypertension.[8] Self-management is crucial as hypertension is primarily managed at home (80%). The main triggers, according to interviews with Grogol Community Health Center nurses, are dietary factors, drug adherence, family history, and lifestyle. This is consistent with previous research that has linked hypertension-triggering diets, low medication adherence, and unhealthy lifestyles in the elderly with hypertension.[9] Self-management can boost confidence in care by focusing on five key areas.[10]

Grogol has the highest number of older adult hypertension cases, 8,044 in 2024 from 14 villages, with Cemani having the most and Parangjoro having the fewest. The large number of cases is incomparable to older adults' understanding of hypertension, necessitating a study that investigates the relationship between knowledge level and self-management practices. This study examines the older adults at the Grogol Community Health Center, as opposed to previous studies that focused more on adult patients. This study aims to examine the relationship between knowledge and self-management in hypertension prevention, as well as the consistency of findings across the population. Based on these phenomena, a study entitled The Relationship Between Knowledge Level and Self-Management Among Older Adult Patients with Hypertension in the Grogol Community Health Center was carried out to examine the impact of knowledge level on the practice of self-management among the older adult population.

METHODS

This study employed a cross-sectional analytic design and was conducted in the working area of the Grogol Community Health Center, Sukoharjo Regency, from August to September 2025. This design was selected because it is effective in gathering data all at once and is appropriate for examining the connection between knowledge level and self-management. The study included 8,044 hypertensive older adults aged 60 years from 14 villages. The sample size of 382 respondents was calculated using the Slovin formula: $n = N/(1+Ne^2) = 8{,}044/(1+8{,}044\times0.05^2) = 382$. The cluster random sampling technique was used by selecting four villages at random, then proportionally

distributing the sample based on the number of hypertensive older adults in each village, and randomly selecting respondents in each cluster.

The requirements for inclusion include being 60 years or older, having been diagnosed with hypertension by medical professionals, being registered at the Grogol Community Health Center, being able to read, write, and speak Indonesian, and being willing to sign an informed consent form. Hospitalization, acute illness, and severe cognitive impairment were among the exclusion criteria. The researchers developed the hypertension knowledge questionnaire (Guttman scale, 10 items, score 0-10, with good category = score 8-10, moderate = score 5-7, and low = score < 5) and self-management questionnaire (Likert scale, 4 points, 12 items, score 12-48, with good category = score 40-48, moderate = score 24-39, and poor = score < 24) through theory adaptation to collect data.

Three geriatric/community nursing specialists evaluated the instrument's validity, and 30 respondents were used to test its empirical validity. Every item on both research instruments was deemed valid based on the validity test. The R-count value on the level of knowledge questionnaire (10 items) varied between 0.465 and 0.742, whereas the r-count value on the self-management questionnaire (12 items) was between 0.478 and 0.804. All r-calculated values exceeded r-table 0.361, indicating that both instruments met the validity requirements and were appropriate for research data collection, as well as reliability (Alpha Cronbach's 0.807 for knowledge and 0.817 for self-management).

Over the course of 15 to 20 minutes, researchers and trained enumerators gathered data from senior integrated health services. Data quality was ensured by monitoring and double-entry. Data were analyzed using SPSS 25 with the Chi-Square test (α=0.05) and Fisher's Exact Test as an alternative. This study has received ethical approval from the Ethics Commission of the Faculty of Medicine UMS (number: 5821 / B.1/KEPK-FKUMS/VIII / 2025), and it adheres to the principles of informed consent, confidentiality, the right to withdraw at any time, and data use for research purposes only.

FINDINGS

To comprehend the study's population profile, descriptive information about the respondents' demographics is provided. Table 1 shows the distribution of respondents by age, gender, employment status, and level of education.

Table 1 Distribution of Characteristics of Older Adult Respondents with Hypertension at Grogol Community Health Center 2025 (N=382)

Characteristic	Frequency	Percentage (%)
Age (years)		
60-69	288	75,4
70-79	85	22,3
≥80	9	2,4
Sex		
Male	111	29,1
Female	271	70,9
Education Level		
No formal education	69	18,1
Elementary	91	23,8
Junior High	80	20,9
Senior High	105	27,5
Associate Degree/D3	5	1,3
Bachelor's Degree	31	8,1

Master's Degree	1	0,3
Occupation		
Laborer	73	19,1
Teacher	5	1,3
Housewife	155	40,6
Trader	14	3,7
Retired	31	8,1
Farmer	27	7,1
Private employee	43	11,3
Entrepreneur	34	8,9

According to Table 1, the characteristics of the respondents reveal that more than three-quarters (75.4%) were between the ages of 60 and 69, and the majority of the respondents were female (70.9%). Secondary education (elementary, junior high, and high school) accounted for 72.2% of respondents, while 18.1% had no formal education background. Housewives were responsible for the largest proportion of occupations (40.6%), followed by laborers (19.1%) and private employees (11.3%).

Table 2 Frequency Distribution of Knowledge Level and Self-Management among Older Adults with Hypertension at the Grogol Community Health Center 2025 (N=382).

Variable	Frequency	Percentage (%)
Knowledge Level		
Good (8-10)	62	16,2
Moderate (5-7)	195	51,0
Low (< 5)	125	32,7
Mean ± SB	5,61 ± 1,074	
Median (Min-Max)	6 (3-9)	
Self-Management		
Good (40-48)	18	4,7
Moderate (24-39)	295	77,2
Poor (< 24)	69	18,1
Mean ± SB	28,08 ± 1,686	
Median (Min-Max)	28 (26-39)	

Table 2 shows that, out of a total of 382 respondents, the knowledge level profile was primarily composed of the moderate category (51.0%), followed by the low category (32.7%) and the good category (16.2%). The average SD value was 5.61 ± 1.074, with a median of 6 on a scale of 0-10. A relatively small standard deviation (1.074) suggests that respondents' knowledge scores are consistent around the median. A score range of 3-9 indicates that neither respondent received a perfect score (10) nor a low score (0). However, the self-management profile was dominated by the moderate category (77.2%), with only 4.7% reaching the good and 18.1% in the poor categories. The mean value of 28.08 ± SD was 1.686, and the median was 28. The score range of 26–39 demonstrates that, even though respondents' abilities vary, self-management skills still need to be significantly improved.

Table 3: Relationship Between Knowledge Level and Self-Management among Older Adults with Hypertension at Grogol Community Health Center 2025 (N=382).

Knowledge Level	Self-Management						Total		P Value
	Good (40-48)		Moderate (24-39)		Poor (< 24)		f	%	
	f	%	f	%	f	%			
Good (8-10)	12	19,4	44	71,0	6	9.7	62	100	0,001
Moderate (5-7)	2	1,0	149	76,4	44	22,6	195	100	
Low (< 5)	4	3,2	102	81,6	19	15,2	125	100	
Total	**18**	**4,7**	**295**	**77,2**	**69**	**18,1**	**382**	**100**	

Based on the analysis of the relationship between the knowledge level and self-management in hypertensive older adults (Table 3), the self-management distribution in the good knowledge level found that 71.0% (44 people) had moderate self-management, 19.4% (12 people) were in the good category, and 9.7% (6 people) were in the poor category. Among those with moderate knowledge levels, 76.4% (149 people) had moderate self-management, 22.6% (44 people) had poor self-management, and 1.0% (2 people) had good self-management. In the group with low knowledge level, 81.6% (102 people) had moderate self-management, 15.2% (19 votes) had poor self-management, and 3.2% (4 votes) had good self-management.

The Chi-Square test disclosed a significant correlation between knowledge level and self-management $\chi^2(4, N = 382) = 40.251$, $p = 0.001$. Therefore, the present study found a significant correlation between knowledge level and self-management among older adults with hypertension at Grogol Community Health Center.

DISCUSSION

The vast majority of the study's respondents were aged 60 to 69 (75.4%), which is consistent with previous data, though the study reported a higher proportion.[11] The ease of access to health services in health centers may influence the high participation rate of the young elderly. The majority of respondents (70.9%) were women, which aligns with previous research indicating hypertensive susceptibility among postmenopausal elderly women.[12] Postmenopausal estrogen decline can reduce cardiovascular protection by increasing HDL levels, preventing atherosclerosis.[13] Atherosclerosis causes arterial stiffness[14], increasing the risk of hypertension among elderly women.[15]

According to education level, the majority of respondents completed high school, junior high school, and elementary school. This condition is consistent with the findings that highlight the importance of education in the processing of health information.[16] This study found that a moderate knowledge level was dominant (51.0%), while good self-management had only 4.7%, indicating that knowledge was not fully applied in practice. Housewives, with 40.6% of respondents, and other informal employment groups dominated the occupation segment. This pattern confirms previously reported high rates of hypertension in the non-working population.[17] The occupational diversity reflects domestic stressful conditions, low physical loads, and lifestyle risks that may raise blood pressure.

The current study's findings indicate that most respondents (51.0%) had a moderate knowledge level. These results conform to two other studies carried out previously.[18,19] Nevertheless, the percentage of respondents with good knowledge (16.2%) was lower than the

62.5% reported in other studies.[20] This distinction might be modified by the characteristics of respondents, who are primarily young elderly with secondary education backgrounds and limited access to health information.

The majority of respondents (77.2%) rated their self-management as moderate. This finding differs significantly from the previous report, where the majority of respondents (51.1%) were in the good category.[10] As per the Health Belief Model, perceptions of the advantages of health management should be shaped by sufficient knowledge. Nevertheless, according to Orem's theory, self-management affects not only knowledge but also practical skills and environmental support. Low good self-management (4.7%) is thought to be associated with factors related to education, health service accessibility, lack of support from integrated health post cadres, and local health culture.

According to statistical analysis, knowledge and self-management have a significant relationship (χ^2=40.251; p=0.001), which is corroborated by the previous study's findings.[21] However, a disparity persists, with only a small proportion of respondents with a high level of knowledge demonstrating good self-management. These results imply that while knowledge is important, success in self-management is also determined by supporting factors like practical skills, family support, and access to health services. It follows that in order to turn knowledge into practical actions, structured hypertension education and cadre support in blood pressure monitoring must be strengthened.

A number of aspects of this study can be improved, such as the use of a cross-sectional design, which can be complemented by longitudinal research to gain a more thorough understanding of the dynamics of changes in knowledge and self-management. The narrow focus of the Grogol Community Health Center's research area creates opportunities for comparable studies in other areas with distinct features. Further research can investigate additional supporting factors, such as family support and intrinsic motivation, to supplement existing findings.

CONCLUSION

This study found that the older adults' knowledge is at a moderate level (51.0%), and so is their self-management ability (77.2%). Knowledge and self-management are significantly correlated (p-value = 0.001), suggesting that both have an impact on managing hypertension. These findings investigate the relationship between the quality of knowledge influencing the effectiveness of hypertension management among older adults. Therefore, to strengthen the independence of the elderly, ongoing education and family involvement are required.

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