



**THE RELATIONSHIP BETWEEN SELF-EFFICACY AND MEDICATION
ADHERENCE IN HYPERTENSION PATIENTS**

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ABSTRACT

Hypertension is a state of blood pressure above normal that has an impact on increasing morbidity and mortality rates. Hypertension generally makes sufferers have a low life expectancy and still choose to coexist with hypertension. In increasing life expectancy, hypertensive patients need high self-efficacy. A patient with high self-efficacy had twice the chance of showing better adherence to treatment when compared to patients with low self-efficacy. Objective to find out the relationship between self-efficacy and adherence to treatment for hypertension. This study is included in an observational analytical study with a cross sectional design approach. The subjects of this study were selected using a random sampling technique using 90 subjects who suffered from hypertension. The method used to measure self-efficacy was using the Medication Adherence Self-Efficacy Scale-Revision (MASES-R) and measuring medication adherence was using the Morisky Medication Adherence Scale -8 (MMAS-8). The validity test results showed that 8 questions were valid ($r = 0.300$), while the reliability test indicated that the MASES-R questionnaire ($r = 0.990$) and the MMAS-8 questionnaire ($r = 0.674$) were considered reliable. The results showed that there was a relationship between self-efficacy and treatment compliance in hypertensive patients at the Bambu Apus Health Center where $P\text{-Value} = 0.01 < (0.05)$ with a contingency coefficient value of 0.638 meaning that the strength between variables at a very strong level with the direction of a positive relationship. There is a relationship between self-efficacy and adherence to treatment for hypertension ($P\text{-Value} < 0.05$).

Keywords: hypertension; medication compliance; self efficacy

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INTRODUCTION

Hypertension is defined as a condition in which individuals aged ≥ 18 years exhibit a systolic blood pressure of ≥ 140 mmHg and/or a diastolic blood pressure of ≥ 90 mmHg upon measurement. In such cases, the heart must exert increased effort to circulate blood through the vascular system. Systolic blood pressure reflects the force during cardiac contraction, whereas diastolic pressure represents the force during cardiac relaxation (Sari et al., 2022). According to the World Health Organization (2023), approximately 1.28 billion adults aged between 30 and 79 years are affected by hypertension globally, with nearly two-thirds residing in low- and middle-income countries. As a developing nation, Indonesia is among the countries with a high risk of hypertension among its adult population. Globally, the prevalence of hypertension is reported to be 22%, while in Southeast Asia, the prevalence reaches 36% (Infodatin, 2019). National data from Indonesia in 2018 indicated a hypertension prevalence of 34.11% among individuals aged ≥ 18 years, with the highest rates observed in South Kalimantan (44.13%), followed by West Java (39.60%), East Kalimantan (39.30%), and West Kalimantan (36.99%). Furthermore, the prevalence of hypertension tends to increase with advancing age (Ministry of Health, Republic of Indonesia, 2019).

Long-term projections show that by 2025, 29% of adults worldwide will have hypertension, which is 1.56 billion people worldwide, which is the disease with the highest number of cases in health centers throughout South Tangerang City, namely 390,669. Bambu Apus Health

Center is a health center with a hypertension rate of 50.80% (South Tangerang Health Office, 2023). Hypertension generally causes sufferers to have a low life expectancy and still choose to live with hypertension (Wulandari et al., 2023). In increasing life expectancy, hypertension sufferers need high self-efficacy (Mulyana & Irawan, 2019). In hypertension patients, self-confidence or self-efficacy is needed to control hypertension and good self-care, to improve the health of life (Shahin et al., 2021). Self-efficacy is also defined as the courage to take certain actions and has an important role for individuals in directing their behavior to achieve certain goals (Kuncoro, 2021). This aim to find out the relationship between self-efficacy and adherence to treatment for hypertension.

METHOD

This study uses a quantitative descriptive design, with a Cross Sectional Design approach. Cross Sectional, This study was conducted at the Bambu Apus Health Center, this study was conducted in January - February 2025. The population in this study were all hypertension sufferers who came to check themselves and seek treatment at the Bambu Apus Health Center. This study involved a population of 501 individuals, based on data collected over a nine-month period from January to September 2024. A total of 90 respondents were selected using a total sampling technique. The research instruments comprised validated and reliable questionnaires assessing self-efficacy and medication adherence. The Medication Adherence Self-Efficacy Scale–Revision (MASES-R), as used in the study by Sukmaningsih et al. (2020), consisted of 13 items, all of which were deemed valid with correlation coefficients (r -values) exceeding the critical value of r -table ($r > 0.443$). Meanwhile, the Morisky Medication Adherence Scale-8 (MMAS-8), based on the study by Harijanto et al. (2015), demonstrated item validity with all eight questions showing correlation coefficients of $r = 0.300$, indicating acceptable validity. Reliability testing using Cronbach's alpha showed that both instruments met the acceptable reliability threshold ($\alpha > 0.6$). Specifically, the MASES-R instrument yielded an alpha coefficient of 0.990, indicating excellent internal consistency, while the MMAS-8 achieved a reliability coefficient of 0.674, which was also considered acceptable. Bivariate analysis was conducted using Somers' d test to determine the direction and strength of association between the two ordinal variables.

RESULT

Table 1.
Frequency distribution of characteristics of respondents with hypertension (n=90)

Category	f	%
Age		
26-35 years	1	1.1
36-45 years	13	14.4
46-55 years	18	20.0
55-65 years	27	30.0
>65	31	34.4
Gender		
Man	26	28.9
Woman	64	71.1
Last education		
No school	6	6.7
SD	23	25.6
JUNIOR HIGH SCHOOL	16	17.8
High School/Vocational School/Equivalent	35	38.9
Bachelor	10	11.1
Work		
Doesn't work	63	70.0
Work	27	30.0

Category	f	%
Duration of treatment		
< 5 Years	61	67.8
> 5 Years	29	32.2
Blood pressure		
Tall	14	15.6
Light	45	50.0
Currently	24	26.7
Heavy	7	7.8

Based on table 1, the frequency distribution of respondent characteristics, by age group, and it is seen that most respondents (34.4% or 31 people) are over 65 years old. shows that 71.1% of respondents are female, meaning that 64 women from the total sample obtained data on the gender of respondents. shows that 38.9 percent of respondents have graduated from high school. This is based on responses from 35 people. more than half of the respondents, or 63 people (70.0%), have unemployed status. shows that 61 people (67.8%) of the total sample of respondents have had hypertension for less than five years. shows that 45 people (50.0%) of the total sample of respondents have had mild blood pressure.

Table 2.

Frequency distribution of *self-efficacy* in hypertension patients

Self-efficacy	f	%
High <i>Self Efficacy</i>	79	87.8
Low <i>Self Efficacy</i>	11	12.2

Based on table 2, the frequency distribution of self-efficacy is dominant in the high category, which is 79 people with a percentage of 87.8%. Table 3. Frequency distribution of compliance with treatment for hypertension patients.

Table 3.

Frequency Distribution of Treatment Compliance

Treatment Compliance	f	%
Low medication compliance	15	16.7
Treatment compliance is moderate	20	22.2
High medication compliance	55	61.1
Total	90	100.0

Based on table 3, the frequency distribution of medication compliance, of the 90 respondents (100%) the majority had high medication compliance with a total of 55 people (61.1%). The level of medication adherence in hypertension patients was measured using the MMAS (modified morisky adherence scale) questionnaire categorized into three, namely high, medium and low. The results of self-efficacy measurements in this study using the MASES-R questionnaire were categorized into two, namely high and low, the results were obtained as follows in table 4.

Table 4.

Frequency distribution of respondents based on level of medication compliance and *self-efficacy*

		Treatment Compliance			
		tall	Currently	low	total
<i>Self Efficacy</i>	Tall	50	17	12	79
	low	1	3	7	11

Table 4 shows that the most 51 people have high medication compliance with 1 respondent low *self-efficacy* and 50 respondents high, 20 respondents have moderate medication compliance with 3 respondents low *self-efficacy* and 17 respondents high *self-efficacy*, and there are 19 respondents who have low medication compliance with 7 respondents low *self-efficacy* and 12 respondents high self-efficacy.

Table 5.
Somer's d Test

Directional Measures		Value	Approximate Significance
<i>Ordinal by Ordinal</i>	<i>Somers' d</i>		
	<i>Symmetric</i>	0.342	0.001
	<i>Self Efficacy Dependent</i>	0.234	0.001
Dependent Treatment Compliance		0.638	0.001

Based on the results presented in Table 5, the p-value was 0.001. Since the p-value is less than the significance level ($\alpha = 0.05$), the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. This indicates a statistically significant relationship between self-efficacy and medication adherence among patients with hypertension. The correlation coefficient was found to be 0.638, suggesting a strong positive relationship. This implies that higher levels of self-efficacy are associated with higher levels of medication adherence.

DISCUSSION

Respondent Characteristics

The results of the study found that most people with hypertension were elderly, namely >65 years. This is in line with other studies where those aged >65 years or older are at risk of developing hypertension of more than 70% or having high blood pressure. That with increasing age, the risk of blood pressure becomes greater so that the prevalence of hypertension among the elderly is quite high, which is around 40% with deaths around over the age of 65 years (Ungar, et al., 2017; Tukan et al., 2023). There were more female respondents, namely 64 respondents (71.1%) compared to male respondents. This is the same as what was explained by (Listiana et al., 2020) that more women suffer from hypertension than men. This is all because women experience menopause, a condition where hormonal changes occur which experience a decrease in the ratio of estrogen and androgen hormones, causing increased renin release, resulting in high blood pressure.

The study findings revealed that the majority of respondents with hypertension had completed a high school level education, accounting for 35 individuals. This is consistent with previous research suggesting that education serves as a key factor in acquiring knowledge, which contributes to improving quality of life. Generally, individuals with higher education levels tend to possess greater knowledge and stronger personal resources. Education plays a significant role in shaping individual health-related behaviors (Budhiati, 2015). In terms of employment status, the largest proportion of hypertensive respondents were unemployed, totaling 63 individuals. This finding aligns with research conducted by Pratiwi et al. (2020), which highlights that advancing age is associated with the gradual or sometimes rapid decline in organ function. In this study, many individuals with hypertension were elderly and no longer employed due to age-related limitations or health conditions that impeded their ability to work. Regarding disease duration, the highest number of respondents had been diagnosed with hypertension for less than five years, totaling 61 individuals, compared to 41 respondents (44.1%) who had been diagnosed for more than five years. These findings are consistent with the study by Liberty et al. (as cited in Hakim, 2015), which also reported a higher number of individuals with a shorter duration of hypertension. One possible explanation is that patients with a longer history of hypertension may experience treatment fatigue, especially if clinical outcomes are not as favorable as expected. Consequently, those who continue to seek care at community health centers are often individuals diagnosed within the past five years.

Blood Pressure

Blood pressure measurements in this study showed that the highest proportion of respondents had mild hypertension, characterized by systolic pressure ≥ 140 mmHg and/or diastolic pressure ≥ 90 mmHg. Similar findings were reported by Sugiharto et al. (2018), who found that most individuals with hypertension exhibited systolic values above 140 mmHg and

diastolic values above 90 mmHg. According to Singh et al. (2017), blood pressure among individuals with hypertension may fluctuate depending on lifestyle practices. This was corroborated by a respondent in the present study who noted that their blood pressure tended to rise with persistent smoking and decrease upon cessation, highlighting the influence of behavioral factors on hypertension management.

Self efficacy of hypertension patients

The results of the study found that hypertension sufferers have high self-efficacy. The results of this study are the same as the study conducted by (Amila et al., 2018) showing that the largest number of people suffering from hypertension have high *self-efficacy*. Having *self-efficacy* makes the person have a better understanding to undergo the healing process, because belief is an important thing in improving health. The high *self-efficacy* of a person will assess themselves as being able to get the best results and adjust what they have. expected. On the other hand, if a person's *self-efficacy* is low, there is a high possibility that the person will not be able to get what is expected, including recovering from hypertension (Agustin et al., 2018).

Treatment compliance of hypertension patients

The results of the study showed that hypertensive patients had high medication compliance. The results of this study were the same as the study conducted by (Nurmalita et al., 2019) which showed that most hypertensive patients had high medication compliance. Compliance is the most important thing for the continuity of health in hypertensive patients. Conversely, non-compliance with medication in hypertensive patients is the main factor in the failure of the hypertension therapy process (Nurmalita et al., 2019).

Relationship between Self Efficacy and Treatment Compliance in Hypertension Patients

The results of the study conducted by researchers on 90 respondents with hypertension using *the Somers'd Test* obtained a *P Value* = 0.001. If *P Value* = $< \alpha$ (0.05) then H_0 is rejected and H_a is accepted, meaning that there is a relationship between *self-efficacy* and compliance with treatment for hypertension at the Bambu Apus Health Center. The correlation coefficient shows that the strength of the relationship between *self-efficacy* and compliance with taking medication has a very strong relationship with a positive relationship direction, where the higher the *self-efficacy*, the higher the compliance with taking medication. The results of this study are in line with the research conducted by (Kawulusan et al., 2019) which obtained the results of the study using *the Fisher's exact test* obtained a *P Value* = 0.001 < 0.05 so that H_0 was rejected, which means there is a relationship between *self-efficacy* and the level of treatment compliance in hypertensive patients. It can be stated that belief or *self-efficacy* is one of the things that can influence treatment compliance. hypertension by taking antihypertensive drugs. If hypertension treatment is stopped, hypertension healing will also take longer or can even result in several complications (Pratiwi et al., 2020). Therefore, to remain compliant in hypertension treatment, every hypertension sufferer must have *self-efficacy*.

CONCLUSION

The study, conducted from February 3 to 9, 2025 involving 90 respondents, yielded several key findings. First, a significant association was found between self-efficacy and medication adherence among patients with hypertension. The Somers' d statistical test produced a p-value of 0.01 ($p < 0.05$), indicating that individuals with higher levels of self-efficacy were more likely to exhibit better adherence to antihypertensive therapy. Second, the demographic characteristics of the respondents showed that the majority were aged over 65 years (34.4%), predominantly female (71.1%), had completed senior high school education (38.9%), and were mostly unemployed (70%). Most respondents (67.8%) had been diagnosed with hypertension for less than five years. Additionally, half of the participants (50%) had blood

pressure readings within the mild hypertension range (systolic 140–159 mmHg and/or diastolic 90–99 mmHg). Third, a high level of self-efficacy was observed in 79 respondents (87.8%), reflecting a strong positive perception of their ability to manage their hypertensive condition effectively. Fourth, 55 respondents (61.1%) demonstrated high medication adherence, further reinforcing the finding that self-efficacy plays a critical role in enhancing adherence to hypertension treatment regimens.

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