

Self-Efficacy of Medication Adherence in Hypertensive Patients in Bandung Regency, Indonesia

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ABSTRACT

Background: Medication adherence is essential to controlling hypertensive patients' blood pressure. However, the high rate of noncompliance among hypertension sufferers with taking medication is due to a lack of self-efficacy regarding the importance of hypertension medication. Therefore, this study aimed to determine the correlation between self-efficacy and adherence to drug regimens in hypertensive patients. **Methods:** This study used a cross-sectional design. A total of 96 hypertensive patients were involved in the study using purposive sampling. Patients who participated in this study had high blood pressure and routinely checked their health at Bandung Regency Hospital, Indonesia. Self-efficacy in managing hypertension was evaluated using the MASES scale, and medication compliance was evaluated using the MMAS-8. The Spearman-rank test was used in correlation analysis. **Results:** Almost half of the patients (39.59%) with low medication self-efficacy have low adherence to hypertension regimens. There was a substantial correlation between self-efficacy and medication compliance ($\rho = 0.493, p < 0.01$). **Conclusions:** Therefore, this study suggested that strengthening self-efficacy in their hypertension regimens might help to improve medication adherence and drive it. Furthermore, healthcare professionals must understand the importance of self-efficacy in medication adherence for hypertensive patients.

Keywords: Hypertension; Medication Adherence; Patient Compliance; Self-Efficacy

INTRODUCTION

Hypertension is recognized as the "silent killer" because the symptoms are not recognized and lead to consequences that result in death (World Health Organization, 2013). Furthermore, hypertension accompanied by decreased physical function in sufferers causes discomfort and limitations in daily activities (Halliday *et al.*, 2018). Prevention of high blood pressure recurrence in patients with hypertension modifies a healthy lifestyle by avoiding high-calorie foods, losing weight, improving physical activity, and controlling high blood pressure in hypertensive patients by taking hypertension medication regularly (Ali & Sasidharan, 2022).

Medication adherence is one of the essential requirements for achieving therapy effectiveness and improving the patient's quality of life. Strict early blood pressure control improves life expectancy in patients with hypertension (Vaduganathan *et al.*, 2020). According to the studies, 45.2% of 12,603 patients with hypertension had non-adherence to anti-hypertensive medication, and 83.7% of non-adherent patients had uncontrolled blood pressure (Abegaz *et al.*, 2017). Poor adherence to hypertensive medication is a prevalent problem with limited drug efficacy and insufficient blood pressure control (Abegaz *et al.*, 2017; Hamdidouche *et al.*, 2017). Patient noncompliance with medication contributes to therapy failure (Marlina *et al.*, 2019). Therefore, people with hypertension must handle high blood pressure reasonably to prevent a recurrence.

One study about medication adherence to hypertension regimens revealed that almost half of the hypertensive patients (38.6%) at one health center in Indonesia had low medication adherence (Safitri *et al.*, 2023). Likewise, a survey of hypertensive patients found that 66.0% forgot to take hypertension medicine regularly, and 34.0% did not take it because they were busy working. In addition, hypertension sufferers do not take hypertension

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medication because they feel uncomfortable, do not take medicine when traveling far, and do not take medication because they think their body condition is healthy (Hazwan & Pinatih, 2017). Based on some of these studies, hypertension patients' high rate of noncompliance in taking medication is due to their lack of self-awareness in recognizing the role of medicine.

The degree to which a person feels the need for behavior to control himself almost resembles self-efficacy (Nuraeni *et al.*, 2018). Self-efficacy is believing in oneself to handle the required actions (Bandura, 2011a). Self-efficacy refers to a person's belief in their success in acting. Self-efficacy was based on the magnitude and extent of the problem and the power required to carry out the activity (Bandura, 2011b). How an individual uses his mind and feelings to ensure that he is capable and makes himself act can all be influenced by self-efficacy (Abdullah, 2019).

Self-efficacy is the key to the success of hypertension therapy and controlling high blood pressure in hypertension (Foroumandi *et al.*, 2020). Self-efficacy was identified as a determinant of success in controlling high blood pressure in hypertensive patients (Morrison *et al.*, 2015). For example, a study by Salami & Wilandika (2018) revealed low self-efficacy in treating hypertension at a public health center in Bandung, Indonesia (49%). This lack of self-efficacy has an impact on ordinary hypertension treatment actions.

Patients with adequate self-efficacy have a better chance of being willing to take medication regularly than those with low self-efficacy (Huang *et al.*, 2018; Lu *et al.*, 2020; Son *et al.*, 2014; Zhou *et al.*, 2022). In contrast, a study on hypertensive elderly people found that most older people had poor self-efficacy related to their willingness to take hypertension drugs (Rantepadang & Hadibrata, 2023; Son & Won, 2017). To better understand this relationship, this study aimed to identify the correlation between medication self-efficacy and adherence in hypertension patients at a polyclinic hospital in Indonesia.

METHODOLOGY

Participants

The association between medication self-efficacy and adherence in hypertension patients was examined using a cross-sectional approach. The research was conducted at a polyclinic that handles hypertension at a general hospital in the Indonesian province of Bandung. A total of 96 hypertensive patients participated in this study. The sampling technique used was purposive sampling. Purposive sampling was applied as a sampling technique with inclusion criteria: individuals with high blood pressure, routine health check-ups, and no complications symptoms at the study's time. All patients in this study had obtained informed consent and stated they were eager to complete the questionnaire.

Instruments

The sociodemographic questionnaire collected age, gender, education, and occupation characteristics. Medication self-efficacy refers to hypertension patients' belief in their ability to complete therapy successfully. Self-efficacy was measured using the revised version of the Medication Adherence Self-Efficacy Scale (MASES-R), which consisted of 13 questions. The MASES-R questionnaire was adopted from Ivana (2020), which has been translated into Indonesian and declared valid ($r=0.91$) and reliable (Cronbach $\alpha=0.94$). Meanwhile, medication adherence was a positive behavior in taking hypertension medication regularly. Medication adherence was evaluated using the Morisky Medication Adherence Scale (MMAS-8), which consisted of 8 questions. This questionnaire has been modified in Indonesian and was declared valid ($r=0.46$) and reliable (Cronbach $\alpha=0.94$) (Nuvri, 2019).

Data Collection

Data for the study was obtained in 2022 between January and February. To recruit patients from the polyclinic in the hospital, the researcher asked the qualified patients if they would be ready to participate in the survey after screening them according to criteria. After the participants showed interest, the researcher introduced himself, described the study, and got their consent. The survey took between 15 and 20 minutes to complete, and if any patients had any questions or concerns, the researcher clarified the questions' contents. Next, the researcher checked the completed questionnaire and ensured the respondents had filled out all the questions. If questions still need to be answered, the researcher asks respondents to answer these questions. If respondents could not complete

the survey independently, the researcher performed interviews to gain data.

Statistical Analysis

The sample's regimen's graphic characteristics, medication self-efficacy, and adherence to the hypertension regimen were displayed using descriptive statistics. A Spearman-rank test was computed to examine the relationship between the three variables (sociodemographic, medication self-efficacy, and medication adherence). A Spearman-rank test examined the relationship between medication self-efficacy and medication adherence.

Ethical Consideration

This study was approved by the Research Ethics Committee of Universitas Aisyiyah Bandung, Indonesia on 17th January 2022 by specified guidelines in the Helsinki Declaration with reference number 84/KEP.01/UNISA-BANDUNG/I/2022.

RESULTS

According to the study findings (Table 1), more than half of the hypertension patients were female (54.2%), and the early elderly age range was 46–55 years (37.5%). In addition, most respondents do not work (53.1%), and many have completed primary education (29.2%). A significant relationship was discovered between sociodemographic characteristics and medication self-efficacy. Furthermore, significant correlations were found between medication adherence and specific sociodemographic factors such as gender and age, but no significant association was found with education or occupation.

In addition, as shown in Table 2, overall hypertensive patients involved in this study had low self-efficacy of treatment (77.1%; average score: 25.15 ± 9.30) and low medication adherence (44.8%; average score: 5.48 ± 1.69). Medication self-efficacy scores are positively correlated with medication adherence by Spearman's correlation ($\rho = 0.493, P < 0.01$) (Table 3). The study revealed that approximately half of the patients (39.59%) with low medication self-efficacy have low medication adherence to hypertension regimens. Thus, increasing the self-efficacy of medication would increase adherence to hypertension medication.

Table 1: Sociodemographic Characteristics and Their Relationship to Self-Efficacy and Medication Adherence

Sociodemographic	f	%	Correlation (p-value)	
			Self-efficacy	Adherence
Gender			-0.005	-0.015
Male	44	45.8		
Female	52	54.2		
Age			0.047	-0.014
Early adults (26-35 years old)	10	10.4		
Late adults (36-45 years old)	17	17.7		
Early elderly (46-55 years old)	36	37.5		
Late elderly (56-65 years old)	33	34.4		
Education			0.026	-0.095
Primary education	28	29.2		
Lower secondary education	23	24.0		
Upper secondary education.	27	28.1		
Tertiary education	18	18.8		
Occupation			0.024	0.126
Unemployment	51	53.1		
Self-employed	9	9.4		
Civil servant	22	22.9		
Laborer	14	14.6		

Significance was taken for analysis at $p < 0.05$

Table 2: Numbers, Percentages, and the Average Scores of Self-Efficacy and Medication Adherence in Hypertension Patients

Variable	f	%	Average Score (mean±SD)
Medication Self-Efficacy			
High	22	22.9	25.15±9.30
Low	74	77.1	
Medication Adherence			
High	14	14.6	5.48±1.69
Moderate	39	40.6	
Low	43	44.8	

Table 3: The Relationships Between Medication Self-Efficacy and Adherence to Medication for Patients with Hypertension

Medication Self - Efficacy	Medication Adherence						rho	P value
	High		Moderate		Low			
	f	%	f	%	f	%		
High	4	4.16	13	13.54	5	5.21	0.493**	0.000
Low	10	10.42	26	27.08	38	39.59		

** Correlation is significant at the 0.01 level

DISCUSSION

Self-Efficacy and Adherence to Hypertension Regimens

Self-efficacy of hypertension medication was favorably associated with adherence to high blood pressure drug regimens in hypertensive patients at the internal medicine polyclinic in a general hospital. Although in this study, most hypertensive patients had low self-efficacy of treatment and adherence to medication. Several studies have found a link between self-efficacy and medication adherence in chronic conditions such as hypertension (Daniali *et al.*, 2017; Kawuluan *et al.*, 2019; Shen *et al.*, 2020). In addition, individuals with high blood pressure who have higher self-efficacy are more likely to take high blood pressure drug regimens as prescribed regularly (Schoenthaler *et al.*, 2016; Shen *et al.*, 2020; Yang *et al.*, 2016). In other words, patients who felt more confident in their abilities had a considerably higher likelihood of sticking with their treatment plan.

Adherence is essential to the achievement of hypertension treatment goals. In addition, medication adherence was influenced by motivation, self-efficacy, treatment costs, satisfaction with health services, and support (Unni & Bae, 2022). One of the most critical characteristics of adherence to hypertension medication is self-efficacy, or a person's belief in their ability to execute a healthy behavior successfully (Morrison *et al.*, 2015; Shen *et al.*, 2020; Warren-Findlow & Seymour, 2011).

In hypertension patients, low self-efficacy and adherence to medication for high blood pressure are closely related to patient beliefs regarding treatment methods. Likewise, medication non-adherence is associated with the patient's thoughts about his illness (Świątoniowska-Lonc *et al.*, 2021). Similarly, complex therapy protocols, concerns about drug side effects, and a feeling of well-being and being symptom-free are also often found in patients with hypertension (Glombiewski *et al.*, 2012; Jankowska-Polańska *et al.*, 2017).

Moreover, people with hypertension must take drugs for an extended period, even though they still have to take medication even though their blood pressure is stable. Even so, the most common reason for non-adherence is the absence of symptoms. One of the primary reasons for noncompliance is that hypertension symptoms typically have low severity and do not interfere with the patient's activities. In this condition, hypertensive patients believe

regular treatment is no longer needed (Ashoorkhani *et al.*, 2018). Therefore, self-efficacy becomes vital to controlling adherence to hypertension treatment.

Self-Efficacy in the Treatment of Hypertensive Patients

Self-efficacy in high blood pressure treatments is the belief that, in their abilities, patients can undergo regular treatment and successfully control blood pressure within normal limits. Self-efficacy refers to people's belief in their ability to perform at a high level and control circumstances impacting their lives. Self-efficacy also affects how people experience, think, encourage themselves, and act (Bandura, 2011a, 2011b). A person with solid self-efficacy can act to alter their environment's circumstances. On the other hand, a person with low self-efficacy believes he cannot accomplish everything around him. When faced with a challenging scenario, someone with low self-efficacy is likelier to give up than someone with solid self-efficacy who can work through difficulties (Wardhani *et al.*, 2019).

People who have a strong sense of self-efficacy are more inclined to take the initiative to start behaviors that will help them preserve their health when faced with health threats (Castillo-Mayén *et al.*, 2020) and demonstrate a more significant effort to continue the behavior so that it has a positive effect on the individual (Leman *et al.*, 2021). Individuals with high self-efficacy will also survive and are not easily influenced to conduct risky behaviors because they are firm and do not give up easily on maintaining non-harmful behaviors (Shen *et al.*, 2020). Without adequate self-efficacy, hypertensive patients are reluctant to try to perform behaviors that support their health.

Self-efficacy significantly affects healthy behavior, especially in controlling blood pressure in hypertensive patients (Morrison *et al.*, 2015; Salami & Wilandika, 2018; Shen *et al.*, 2020). Each person possesses a certain level of awareness known as self-efficacy. A study indicates that awareness programs have enhanced the healthcare practices and knowledge of rural individuals concerning the complications of hypertension (Sarkar, 2020). This, in turn, has the potential to lower the morbidity rate even further. For example, hypertension medication requires awareness to take medicines routinely and regularly for life so as not to cause complications from increased blood pressure.

Medication Adherence When Taking Anti-Hypertensive Drugs

Taking medication is a routine activity for hypertensive patients. Hypertensive patients must be regular and timely in taking medication; adherence is essential to this treatment. Adherence is a behavior that develops from contact between healthcare professionals and patients so that patients are aware of the plan and its implications and consent to follow them (Glombiewski *et al.*, 2012). However, hypertensive patients who take medication will face obstacles to adherence. This obstacle occurs because the consumption pattern of taking medication in hypertensive patients is carried out routinely and continuously, which can cause boredom or forgetting to take medication (Glombiewski *et al.*, 2012; Mamaghani *et al.*, 2020).

Persons with hypertension must adhere to drug regimens to regulate their blood pressure, which can be achieved by taking anti-hypertensive regimens (Vrijens *et al.*, 2017). The danger of cardiovascular disease is increased by non-adherence to medicine, and long-term risks can harm organs like the heart, kidneys, and brain (Dragomir *et al.*, 2010). Hypertension (HT) is recognized as a primary contributing factor to the occurrence of heart disease (Nugraha, & Widyastuti, 2021). Therefore, improving medication adherence is critical for treating hypertension and lowering the prevalence of cardiovascular illnesses and deaths (Bekele *et al.*, 2019; Yue *et al.*, 2015).

Medication non-adherence is still a common problem for patients with hypertension. As previously stated, this noncompliance is caused by several factors, such as patients who do not feel any clinical symptoms in their bodies, fear of the effects of the drugs they are taking, and having to consume them every day, which causes boredom with medication (Ashoorkhani *et al.*, 2018; Glombiewski *et al.*, 2012; Karbownik *et al.*, 2020). All these factors become obstacles to medication adherence if they are not based on knowledge of the necessity of medication and self-confidence to keep the body healthy.

The results confirmed that age and gender were significantly associated with medication adherence, but for education and work, there was no relationship with medication adherence. Several studies explain that the factors influencing adherence to hypertension treatment include gender, education, occupation, level of knowledge, and

family support (Chacko & Jeemon, 2020; Lukmawati *et al.*, 2020; Miller, 2016; Pan *et al.*, 2021). Meanwhile, according to WHO (2003), socioeconomic level, health care system, health conditions, therapy, and patient characteristics all influence adherence. In addition, self-management is maintained by increasing the patient's self-efficacy in managing disease (Salami & Wilandika, 2018; Wilandika, 2019; Wilandika *et al.*, 2019), including patient compliance with taking high blood pressure prevention drugs.

CONCLUSION

Medication adherence among hypertension patients positively correlates with self-efficacy in taking medications. Therefore, a high level of self-efficacy will increase adherence to hypertension medications. Because hypertension patients have low adherence to drug regimens, treatments can focus on enhancing self-efficacy to give them reasonable confidence in adhering to their treatment plan. Hypertensive patients need reinforcement regarding their beliefs in taking the medication regularly and on time and motivation to consistently take the drug even though they are not experiencing symptoms. Meanwhile, in a practice setting, it is suggested that medication adherence among hypertensive patients can be increased and encouraged through increased self-efficacy. In addition, healthcare professionals must understand the importance of self-efficacy in medication adherence for hypertensive patients. Healthcare professionals can provide support and motivation for strengthening self-confidence to maintain a healthy lifestyle for hypertension patients through health promotion.

Conflict of Interest

The authors declare that they have no competing interests.

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