



Locus of Control and Self-Efficacy Relationship with Medication Adherence in Elderly with Hypertension

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A B S T R A C T

Patients with hypertension in the elderly often experience non-compliance in the treatment process. In addition, they also experience difficulty in controlling themselves, which is known as the locus of control. An unhealthy lifestyle in the elderly tends to have low self-efficacy, which has an impact on non-adherence to treatment. Therefore, this study aims to identify the dominant factors associated with medication adherence in the elderly with hypertension. The study design was correlational analytic with a cross sectional approach. The population in this study were 36 elderly people with a diagnosis of hypertension who were selected using a total sampling technique. The questionnaire used a multidimensional Health Locus of Control Scale (MHLCS) form C, Self-efficacy for Managing Hypertension, MMAS-8 (Morisky Medical Adherence Scale-8 Items). Data analysis using Pearson Product Moment static test and Linear Regression. In this study, it was found that locus of control and medication adherence had a significant relationship with p -value=0.005, and r -value =0.460, while self-efficacy and medication adherence had a significant relationship with p -value= 0.001 and r -value= 0.527. The most dominant variable of medication adherence was self-efficacy (p =0.02; B =0.335). Based on these results, it can be concluded that the elderly with hypertension who adhere to medication have a good locus of control and high self-efficacy. Adherence to taking medication can be improved by providing health education and increasing self-efficacy through support from family.

INTRODUCTION

The elderly tended to experience health problems caused by decreased body function due to the aging process and one of them in the cardiovascular system (Darmojo, 2010). Hypertension is a blood circulation disorder in which there is an excessive and constant increase in blood pressure in the arteries (Zubaili, M., Jayanti, A., Rahmi, A., & Akbar, 2019). Patients with hypertension in the elderly, tend to surrender to what happened to them without any effort to make changes (Iskandarsyah, A., de Klerk, C., Suardi, D. R., Sadarjoen, S. S., & Passchier, 2014).

The elderly felt able to control themselves against the disease suffered or the existence of external factors, this is called the locus of control which is the belief of individuals about the location of control power in their lives both internally and externally (Iskandarsyah, A., de Klerk, C., Suardi, D. R., Sadarjoen, S. S., & Passchier, 2014). The level of compliance with taking antihypertensive drugs is still very low and the length of suffering from hypertension has an impact on patient compliance (Liberty, I. A., Pariyana, P., Roflin, E., & Waris, 2018).

The success of hypertension management is influenced by the patient's adherence to taking medication, controlling stress, and maintaining a diet or diet (Bistara *et al.*, 2020). Hypertensive clients must have self-

efficacy in order to be motivated to strive optimally in the process of achieving better health quality through the belief to obediently carry out hypertension treatment so as to prevent complications. Self-efficacy is a determining aspect of individual compliance (Mahbubah, 2018). Good adherence of hypertensive patients to a therapeutic regimen will improve optimal health quality (Manurung, 2016).

Riskesdas 2018 stated an estimated number of cases of hypertension in Indonesia of 63,309,620 people. Hypertension occurs in the age group of 31-44 years (31.6%), age 45-54 years (45.3%), age 55-64 years (55.2%). The prevalence of hypertension of 34.1% is known that 8.8% are diagnosed with hypertension and 13.3% of people diagnosed with hypertension do not take medication and 32.3% do not routinely take medication (Development, 2019). The prevalence of hypertension in East Java is 13.47% or about 935,736 population with a proportion of men at 13.78% and women at 13.25%. While the prevalence of hypertension in the city of Sidoarjo by 8.79% (Office, 2017).

The initial survey conducted on 12 elderly people with hypertension in Kedungnolo Hamlet, Krembung Subdistrict, found 4 elderly people have a high locus of control and self-efficacy, 4 elderly people have low locus of control, 2 elderly people feel disturbed by taking drugs regularly from health workers, 2 people say difficulty obeying the rules of eating, taking medication surrender to the disease suffered because the elderly feel able to control themselves against the disease suffered.

Hypertension is influenced by factors of Age, race/ethnicity, urbanization, geography, sex (Manuntung, 2018). Increased blood pressure in the elderly occurs because the elasticity of the aortic wall decreases, thickens the valves in the heart and causes the heart valves to become stiff. This causes the heart's ability to decrease by 1% every year and a decrease in heart contraction and volume resulting in an increase in blood pressure caused by an increase in vascular resistance (Dewi, 2014). Prevention that can be done in patients with hypertension is to regularly take medication and run a healthy lifestyle (Ridwan, 2009).

A healthy lifestyle in people with hypertension can be achieved by having self-efficacy so as to minimize complications and improve their quality of life and conversely the low self-efficacy is more likely not to pay attention to a healthy lifestyle (Permasatasari, L. I., Lukman, M., 2014).

Locus of control plays a role in medication adherence, and health status can be controlled by itself as an internal locus of control. Meanwhile, social support, family support and health workers include communication relationships between patients and doctors and other medical personnel as an external locus of control (Katuuk, M., & Gannika, 2019) (Safitri, 2013).

The family's support can improve self-efficacy in sufferers (Bonsaksen, T., Lerdal, A., & Fagermoen, 2012). One source of self-efficacy associated with family support is verbal persuasion. When a person is encouraged by others to manage disease-related problems. Improving one's understanding of his illness, is when the closest person talks about his experience so that it affects others (Ramadhani, D. Y., MM, F. A., & Hadi, 2016). Support from the community by expanding promotive and preventive services for the

sustainability of the program so that it can increase awareness, understanding and compliance with blood pressure control, also taking hypertension medication regularly (Supriati, 2019). Based on the above facts, the purpose of this study is to identify the dominant factors associated with drug-taking compliance in the elderly with hypertension

METHOD

The study design is correlational analytics with a cross sectional approach. This research was conducted in November 2020 - March 2021 in Kedungnolo Hamlet RW 09 Tanjek Wagir Village Krembung Sidoarjo Subdistrict. The population in this study was the elderly with hypertension as many as 36 people, with a total sampling technique. This study used a Multidimensional Health Locus of Control Scale (MHLCS) form C questionnaire to determine locus of control, self-efficacy for managing hypertension, and MMAS-8 (Morisky Medical Adherence Scale-8 Items) to assess medication adherence. Respondents are required to fill in informed consent as evidence of consent to participate in the study. Then, the results of the questionnaire assessment carried out data processing with univariate, bivariate and multivariate tests. Bivariate using Pearson Product Moment and Multivariate using Linear Regression. All analysis using software SPSS Ver.25.

RESULT

Table 1 Distribution of Frequency of Characteristics of Elderly Hypertension in Kedungnolo Rw 09 Village Tanjek Wagir District Krembung Sidoarjo, March 2021, n = 36.

No.	Data	Frequency	Percentage
1.	Age		
	60- 70 years	32	88,89%
	71-81 years	4	11,11%
	Total	36	100%
2.	Gender		
	Men	10	27,78%
	Woman	26	72,22%
	Total	36	100%
3.	Long suffered from hypertension		
	≥ 2 years	19	52,78%
	≤ 2 years	17	47,22%
	Total	36	100%

Table 1 shows that the majority of respondents in Kedungnolo Hamlet, RW 09, Tanjek Wagir Village, Krembung District, Sidoarjo Subdistrict, aged between 60-70 years, were 32 respondents with a percentage (88.89%), and most of the respondents were female as many as 26 respondents with a percentage (72.22%). In addition, it was found that the duration of suffering from hypertension in the respondents obtained an average of 2 years as many as 19 respondents with a percentage (52.78%).

1. Locus of Control of Hypertensive People

Table 2 Characteristics of Respondents Based on Locus of Control in Elderly Hypertension in Kedungnolo Hamlet RW 09 Tanjek Wagir Village Krembung Sidoarjo Subdistrict

Locus of Control	Frequency	Presentation
Good	29	80,56%
Less Good	7	19,44%
Sum	36	100%

Table 2 shows most respondents have a locus of control with a good category of 29 respondents with a percentage of 80.56%.

2. Self-Efficacy of People with Hypertension

Table 3 Characteristics of Respondents Based on Self-Efficacy in Elderly Hypertension in Kedungnolo Hamlet RW 09 Tanjek Wagir Village Krembung Sidoarjo District

Self-Efficacy	Frequency	Presentation
Tall	29	80,56%
Low	7	19,44%
Sum	36	100%

Table 3 shows that most respondents have high-category self-efficacy with 29 respondents with a percentage of 80.56%.

3. Compliance with Taking Hypertension Medication

Table 4 Characteristics of Respondents Based on Drug Compliance in Elderly Hypertension in Kedungnolo Hamlet RW 09 Tanjek Wagir Village Subdistrict Krembung Sidoarjo

Drug Compliance	Frequency	Presentation
Can	28	77,78%
Unable to	8	22,22%
Sum	36	100%

Table 4 shows that most respondents have drug compliance with the category of able as many as 28 respondents with a percentage of 77.78%.

4. Locus of Control Relationship with Drug Compliance

Table 5 Locus of Control Relationship with Drug Compliance in Elderly Hypertension in Kedungnolo Hamlet RW 09 Tanjek Wagir Village Krembung Sidoarjo Subdistrict

Variable	Mean	Min-Maks	95% CI	p	r
Locus of Control	51,39	45-53	50,70-52,08	0,005	0,460
Drug Compliance	12,47	9-16	11,95-12,99		

The locus of control distribution in the elderly with hypertension in this study showed an average score of 51.39 with the highest score of 53 and the lowest being 45 with an estimated 95% interval between 50.70 to 52.08. Meanwhile, adherence to medication shows an average value of 12.47 with the highest score of 16 and the lowest being 9 and has an internal estimate of 95% IC between 11.95-12.99.

Locus of control and medication adherence has a significant relationship with p value = 0.005 and r value = 0.460 which indicates that the relationship between locus of control and medication adherence has moderate strength.

5. Self-Efficacy Relationship with Drug Obedience

Table 6 Relationship between self-efficacy and adherence to medication for elderly with hypertension in Kedungnolo Hamlet, RW 09, Tanjek Wagir Village, Krembung Village, Sidoarjo District

Variable	Mean	Min-Maks	95% CI	p	r
Self-Efficacy	25,36	20-27	24,66-26,06	0,001	0,527
Drug Compliance	12,47	9-16	11,95-12,99		

The distribution of self-efficacy in the elderly with hypertension in Kedungnolo Hamlet showed an average score of 25.36 with the highest score of 27 and the lowest being 20 and the 95% estimated interval between 24.66 to 26.06. Meanwhile, medication adherence showed an average value of 12.47 with the highest score of 16 and the lowest being 9 and it had an internal estimate of 95% between 11.95-12.99. Self-efficacy and medication adherence have a significant relationship with p value = 0.001 and r value = 0.527 which indicates a relationship between self-efficacy and adherence to moderate strength medication.

6. The Dominant Variable

Table 7 Results of Bivariate Analysis of Multivariate Candidate Variables with Drug Drinking Compliance in Elderly Hypertension in Kedungnolo Hamlet RW 09 Tanjek Wagir Village Krembung Sidoarjo Subdistrict

Variable	B	ONE	Beta Correlation	Sig.	R ²
Locus of Control	0,277	0,104	0,366	0,12	0,429
Self-efficacy	0,335	0,102	0,450	0,02	

The results of the linear regression test showed that each increase in medication adherence would increase by 0.335 after the locus of control variable was controlled, and there was an increase in drug adherence by 0.277 after the locus of control variable was controlled. The most dominant variable on medication adherence is self-efficacy.

DISCUSSION

Locus Of Control Relationship with Drug-Taking Compliance in Hypertensive Elderly

The results of this study found a significant relationship between locus of control and medication adherence. These results are in accordance with previous studies, that patients who have an internal control orientation are more obedient to the treatment process that must be carried out compared to patients who have an external control orientation (Omeje, O., & Nebo, 2011).

Other studies have explained that internal beliefs tend to distance him from the efforts of others to help him, thus feeling that only he is capable of making changes in his health while the help of others who are more competent will be rejected (Budiansyah, F. D., & Rositawati, 2015).

Meanwhile, individuals with external locus of control have their own beliefs that their health is determined by fate, fate and chance alone.

People with hypertension with internal dimensions will tend to have a high level of adherence to taking medication, and will make the individual feel responsible for the healing process himself. While the external dimension of the individual has orientation and motivation that comes from outside himself such as destiny or luck and has a low level of obedience due to the low responsibility for his recovery (Ainiyah, N. Izzah, S. R. Zahroh, C., Bistara, D. N. Faizah, 2021).

Elderly people with hypertension should understand about the treatment process undertaken and have confidence to survive. In addition, the need for interaction with fellow elderly people with similar diseases that can strengthen each other, also the role of the family closest and with a conducive environment will support the locus of control of the elderly both and obedient in the treatment process.

Relationship of Self-Efficacy with Drug-Taking Compliance in The Elderly of Hypertension

Based on the results of statistical analysis obtained a value of $p = 0.001$ which shows there is a relationship between self-efficacy and adherence to taking hypertension drugs in Kedungnolo Hamlet RW 09 Tanjek Wagir Village Krembung Sidoarjo District. The results of this study were obtained a value of $r = 0.527$ which showed a correlation between self-efficacy and adherence to taking drugs has moderate strength. In line with the results of the study (Kawulusan, K.B., Katuuk, M. E., & Bataha, 2019) where someone who has high self-efficacy shows obedient behavior in undergoing hypertension treatment.

Based on previous research shows that (Bandura, 2009) the high and low individual self-efficacy can be caused by several factors, including the nature of the tasks faced by individuals, which means that self-efficacy is contrary to individual abilities. Perception of the nature of the task, external inserted (reward) which means that external inventiveness can be a determinant of the level of individual self-efficacy, status or individual roles in an environment, meaning that individuals who are more active play a role. Individuals who have a higher position in their environment make themselves have a higher level of control so that self-efficacy will be higher, information about self-ability means that individuals who receive information related to their high abilities become their own motivation and directly individuals have higher abilities. higher and there is a large increase in self-confidence so that he is committed to completing the action as well as possible (Mahbubah, 2018).

High self-efficacy will encourage a person to be confident in the treatment that is being undertaken and increased knowledge through various media and family support will increase the confidence of the elderly. These beliefs will motivate and increase one's hopes of achieving a cure that ultimately encourages a person to behave obediently in undergoing hypertension treatment.

CONCLUSION

Locus of control and self-efficacy with adherence to taking medication both have an association, but the dominant factor is self-efficacy. Adherence to taking drugs can be improved by providing education through various existing media and improving self-efficacy through support from family.

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