

The effect of morning walk therapy on blood pressure elderly

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World Journal of Advanced Research and Reviews, 2022, 14(01), 580–583

Publication history: Received on 22 March 2022; revised on 26 April 2022; accepted on 28 April 2022

Article DOI: <https://doi.org/10.30574/wjarr.2022.14.1.0371>

Abstract

Hypertension is known as the silent killer. Non-pharmacological treatment of hypertension, a morning walk is a light activity suitable for people with the elderly (elderly) to help control blood pressure in the long term. This study aimed to determine the effect of morning walks on changes in blood pressure in the elderly with hypertension in Pabuaran Kidul village, Cirebon, Indonesia. The research design uses a quasi-experiment with a one-group pre-test post-test approach. The sample is 20 respondents. The research instruments used were observation sheets and sphygmomanometer watches. Analysis of the data used is the Wilcoxon test. The study results on the effect of a morning walk on changes in blood pressure in the elderly with hypertension, the p-value was 0.022, thus ($p < 0.05$). That it can be concluded that morning walks affected blood pressure in the elderly with hypertension. With the results of this study, it is hoped that morning walks have a positive role on the elderly with hypertension. After conducting research on the elderly in Pabuaran Kidul village, it is hoped that the elderly will be able to get used to doing physical activities such as morning walks to lower blood pressure. Physical activity such as walking can lower blood pressure. Even walking can help us have a slim body, and the risk of injury while walking is minimal.

Keywords: Morning walk; Therapy; Blood pressure; Hypertension; Elderly

1. Introduction

Hypertension today is the leading cause of cardiovascular disease, systemic heart disease, heart, and kidney failure, especially in the elderly [1,2]. In the elderly, there is a decline in cells due to the aging process, resulting in organ weakness, physical deterioration, and the emergence of various diseases, primarily degenerative diseases [3,4]. That will lead to biopsychosocial health problems [5].

Hypertension is a disorder of the blood vessel system, resulting in disruption of the supply of oxygen and nutrients to all body tissues [6,7]. This condition causes blood pressure in the arteries to increase, and the heart has to work harder to meet these needs. Hypertension is a disease that does not cause typical symptoms, and it is often not diagnosed for a long time [8]. Several factors can affect hypertension, namely gender, heredity, smoking, obesity, stress, alcohol, lack of exercise, and age [9].

Etiologically, hypertension consists of primary and secondary hypertension. Primary hypertension is a condition when a secondary cause of hypertension is not found [10]. Primary hypertension is thought to develop due to complex interactions between factors that regulate cardiac output and systemic vascular resistance. The early stages of primary hypertension are usually asymptomatic, characterized only by increased blood pressure. The rise in blood pressure is initially temporary but eventually becomes permanent. When symptoms appear, they are typically vague. Headaches, usually in the nape and neck, may occur upon awakening and subside during the day. Other symptoms result from target organ damage and include nocturia, confusion, nausea and vomiting, and visual disturbances [11,12].

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Secondary hypertension increases blood pressure that occurs due to an identifiable basic process [13]. The number of secondary hypertension is only about 5-10% of the overall incidence of hypertension [14]. This type of hypertension is a secondary impact of certain diseases. Conditions that cause hypertension include narrowing of the renal arteries, renal parenchymal disease, and hyperaldosteronism. In addition, certain drugs can also trigger this type of secondary hypertension [15].

Both primary and secondary hypertension can develop into severe hypertension or a hypertensive crisis. There has been no report on the incidence of the hypertension crisis in Indonesia until now. It is necessary to provide several alternative treatments that must be given, not only medically but can be done in a non-medical way in helping to make pharmacological therapy effective. The treatment offered can be tai chi, yoga therapy, nutritional diet, music therapy, or even physical activities such as morning walks [16].

Lowering blood pressure can be pharmacologically using antihypertensive drugs [17]. Non-pharmacological therapy can be attempted to lose excess weight, eat lots of fruits and vegetables to meet potassium, reduce salt and saturated fat intake, stop smoking, not consume alcohol, exercise regularly, and avoid psychological stress [18].

Blood pressure lowered through regular activity [19]. Types of physical exercise (sports) include walking in the morning. Doing a regular morning walk will lower blood pressure [20]. Recent research has shown that regular activity can help maintain the elasticity of blood vessels. Regular physical activity makes it easier for the body to distribute blood to the muscles when walking adequately. So that the heart's workload is reduced, these changes function to reduce heart rate and blood pressure during physical activity due to the heart muscle needs.

Walking activity encourages optimal heart work [20]. Walking activity can improve the heart's performance to meet the energy needs of cells, tissues, and organs of the body [21]. Increased respiratory and skeletal muscle activity increases venous return. It causes an increase in stroke volume, which will directly increase cardiac output, causing a moderate rise in arterial blood pressure. After arterial blood pressure increases, a resting phase occurs. As a result, this phase can reduce respiratory and skeletal muscle activity. This activity causes sympathetic nerve activity and epinephrine to decrease, after which the heart rate decreases.

Based on the phenomena described above, the authors conducted a study that aims to statistically determine the effect of morning walks on changes in blood pressure in the elderly with hypertension.

2. Methods

The research design used a pre-experimental approach with a one-group. Using a total sampling technique makes all the total population used as a sample. The population in this study was 20 people of elderly. The sample in this study is a total sampling of 20 respondents in the village of Pabuaran Kidul block 03, Cirebon, Indonesia, in 2020.

The univariate analysis aims to describe the characteristics of each research variable. It was carried out on the dependent variable, namely blood pressure in the elderly, before and after morning walk intervention. Univariate analysis was carried out on each variable and research results. In general, the results of this analysis produce the distribution and percentage of each variable.

The bivariate analysis aims to perform statistical analysis to determine the relationship between 2 variables. In other words, to determine the relationship of each independent variable (influence of morning walks) with the dependent.

3. Results and discussion

3.1. Blood pressure in the elderly before and after morning walking activities

The following are the results of observing blood pressure in the elderly before and after morning walks in Pabuaran Kidul village block 03, Cirebon, Indonesia.

Table 1 shows the effect of blood pressure on people of elderly in Pabuaran Kidul village, Block 03, Cirebon, Indonesia, between before and after the morning walk. Based on the pre-test results, the blood pressure in the elderly before doing the morning walk was in the category of hypertension stage 1, 12 people (60%), and the stage 2 category was 8 people (40%). After the post-test, blood pressure in the elderly after doing physical activity for a morning walk was categorized as stage 1 hypertension, namely 17 people (85%), and stage 2 hypertension category, namely 3 people (15%). The blood

pressure experienced by the elderly in Pabuaran Kidul village, Block 03, Cirebon, Indonesia experienced a change or an increase in blood pressure with a significance (asyp. Sig. (2-tailed)) of 0.001 less than the critical limit of 0.05.

Table 1 Blood pressure in the elderly before and after morning walks

Blood Pressure	Before Morning Walks		After Morning Walks		P-Value
	Frequency	Percentage	Frequency	Percentage	
Hypertension Stage 1	12	60.0	17	85.0	0.001
Hypertension Stage 2	8	40.0	3	15.0	
Total	20	100	20	100	

3.2. The effect of morning walks on changes in blood pressure in the elderly

Based on the normality test, the data distribution is not normal. Therefore, the hypothesis test of data on changes in blood pressure uses a non-parametric test, namely the Wilcoxon test. Table 2 below shows the results of statistical tests on data on changes in the blood pressure of the elderly after doing morning walking therapy.

Table 2 The results of the Wilcoxon test on the data of changes in blood pressure

	Mean	SD	Z	Asymp. Sig. (2-tailed)	N
Blood pressure changes	146.35	2.382	-3.926	0.022	20

* Significant level 0.05

The Wilcoxon Signed Rank Test results in table 2 are -3.926 with a significance (Asymp. Sig. (2-tailed)) of 0.022, less than the critical research limit of 0.05. Based on this value, the test decision is H_0 rejected, so it can be concluded that there is a difference in blood pressure before and after the morning walk. The results of the statistical test showed that there was a significant effect after a morning walk on changes in blood pressure in the village of Pabuaran Kidul block 03, Cirebon, Indonesia.

The morning walk is a light activity suitable for people with the elderly because it can help control blood pressure in the long term. The limitations of the elderly to carry out daily physical activities can affect changes in blood pressure. Walking activity encourages optimal heart work [20]. Walking activity can improve the heart's performance to meet the energy needs of cells, tissues, and organs of the body [21]. Increased respiratory and skeletal muscle activity increases venous return. It causes an increase in stroke volume, which will directly increase cardiac output, causing a moderate rise in arterial blood pressure. After arterial blood pressure increases, a resting phase occurs. As a result, this phase can reduce respiratory and skeletal muscle activity. This activity causes sympathetic nerve activity and epinephrine to decrease. To minimize the effects of using drugs is necessary to have several alternative non-pharmacological hypertension treatment therapies. Either stage one hypertension or the next stage, non-pharmacological in the form of tai chi, yoga, music therapy, physical activity for a morning walk, or others so that therapy can be used as a solution to treat hypertension, after which the heart rate decreases.

4. Conclusion

Morning walk therapy has a significant effect on reducing blood pressure in the elderly. Morning walk therapy can reduce the level of hypertension, as evidenced by the decrease in the dominance of the elderly with severe hypertension in this study. Non-pharmacological treatment is a better solution than using drugs. Drugs have a terrible effect on the body. In addition to walking, researchers suggest doing other therapies such as tai chi, yoga, and music therapy, as a solution to overcome hypertension.

Compliance with ethical standards

Acknowledgments

The authors would like to thank the Chairperson of STIKes Cirebon for supporting this research.

Disclosure of conflict of interest

No conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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