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Application of Laughter Therapy in Reducing High Blood Pressure in Elderly Hypertension Patients in the Working Area of Tanah Kampung Community Health Center

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Abstract. Hypertension is one of the deadly diseases that can cause stroke, heart attack, heart failure, kidney damage, and many other health problems. This disease also often occurs in the elderly. Various data obtained each year show an increase in patients suffering from hypertension, especially in the elderly. The purpose of this study was to determine the effect of applying laughter therapy in lowering high blood pressure in elderly hypertension sufferers. The treatment of hypertension with pharmacological and non-pharmacological therapy, one of which is by using laughter therapy which functions as a decrease in high blood pressure. The type of research is a quick experiment with a One Group pretest-posttest approach. The population of this study was elderly people with hypertension in the Tanah Kampung Health Center work area, namely 216 people. The sampling technique used was Experimental with a total of 16 people. The results of this study showed the average blood pressure before receiving standard laughter therapy to be systolic 166.75 mmHg and diastolic 103.13 mmHg. In contrast, after receiving standard laughter therapy, the readings were 142.50 mmHg and 91.25 mmHg, respectively. Based on statistical tests, the P value was obtained = 0.000 < 0.05. It can be concluded that there is an effect of laughter therapy in lowering blood pressure in elderly hypertension sufferers. It is expected that the health center can provide health information about the benefits of laughter therapy to the community as one way to lower blood pressure in hypertension patients without side effects.

Keywords: Hypertension, Laughter Therapy, elderly

INTRODUCTION

High Blood Pressure or Hypertension is an increase in systolic blood pressure of more than 140 and diastolic blood pressure of more than 90 mmHg, in two measurements with an interval of five minutes in a state of sufficient rest or calm. Increased blood pressure that lasts for a long time can cause damage to the kidneys (kidney failure), heart (chronic heart disease), and brain (stroke), if not detected early and receive adequate treatment (Mardalena.2017)

World Health Organization (WHO) 2023. Shows that around 4 out of every 5 people with hypertension do not receive adequate treatment, but if countries can increase their coverage, 76 million deaths can be prevented between 2023 and 2050. Hypertension affects 1 in 3 adults worldwide. According to the Indonesian Ministry of Health (2023). 1 in 3 people with hypertension in Indonesia do not realize that they have hypertension. Early detection of hypertension in Indonesia based on ASIK data is 12.04% (25,958,499 of 208,982,372 population aged ≥15 years). The province with the highest early detection coverage is NTB (31.9%), followed by Gorontalo (22.9%) and Banten (21.8%). The 3 provinces with the lowest coverage are West Papua (3.78%), Yogyakarta (3.65%) and Bali (1.25%).

Data from the Jambi Provincial Health Office states that the prevalence of hypertension in 2020 was 1,687,675 people and in 2021 it increased to 719,678 people with hypertension in 2022 and continued to increase again to 732,387 people hypertension (Jambi Health Office 2024). Based on

data obtained from the Sungai Penuh City Health Office. In 2021 there were 6,191 people with hypertension, in 2022 there were 5,877 who suffered from hypertension, while in 2023 there were 13,217 who suffered from hypertension. According to data obtained from the Sungai Penuh City Health Office, cases of hypertension in Sungai Penuh City increase every year (Sungai Penuh City Health Office, 2024).

At the Tanah Kampung Health Center, data was obtained for hypertension sufferers obtained from the elderly polyclinic in 2020, as many as 560 people suffered from hypertension, in 2021 as many as 616 people, in 2022 as many as 687 people, and in 2023 as many as 769 people suffered from hypertension. According to data taken from the Tanah Kampung Health Center in the elderly polyclinic, every year the number of people suffering from hypertension continues to increase. (Medical Record of the Tanah Kampung Health Center, 2024).

The occurrence of hypertension is a non-communicable disease that requires attention from the government. This hypertension is a disease that is familiar to the ears of the world's population and is familiar to the ears of the local community, this disease attacks both young and old, and from the data obtained hypertension mostly occurs in elderly people.

From the research results of Dominggas Bete, et al., (2022) entitled "Laughter Therapy for Blood Pressure in the Elderly with Hypertension". The effect of laughter therapy on hypertension is that it can lower blood pressure because laughter therapy can increase oxygen intake to the lungs and normalize blood circulation, so it can lower blood pressure in the intervention group. Laughter therapy can lower blood pressure and accelerate healing by increasing blood oxygen levels. The effects of hypertension can cause damage to body organs, both directly and indirectly. Several studies have found that the cause of damage to these organs can be through direct effects of increased blood pressure in the organs, or due to indirect effects, including the presence of autoantibodies to the angiotensin II receptor, and oxidative stress. (Laili 2020:8). Several studies mention the need for a combination of pharmacological and non-pharmacological therapy, to be more effective in lowering blood pressure compared to pharmacological therapy alone, such as the addition of meditation therapy and laughter therapy (Herliawati, 2017).

Several studies have mentioned the need for a combination of pharmacological and non-pharmacological therapy to be more effective in lowering blood pressure compared to pharmacological therapy alone such as laughter therapy. Hypertension management in the elderly can be reduced by laughter therapy, because laughter therapy will help control blood pressure by reducing the release of stress-related hormones and can relax, causing smooth blood flow and lowering blood pressure (Maya 2022).

The results of a study conducted by Maya Kumala Sari, et al. (2021) entitled "Literature Review: Effectiveness of Laughter Therapy on Reducing Blood Pressure in Hypertensive Patients in 2021" which has been carried out regarding the Effectiveness of Laughter Therapy on Reducing Blood Pressure in Hypertensive Patients, all studies show that there is a difference in the average decrease in systolic blood pressure in elderly hypertensive patients in the intervention group before the laughter intervention was 148.91 mmHg and after the laughter intervention 149.19 mmHg and after the intervention 91.81 mmHg.

From the results of the study by Domingas Bete et al., (2022). Entitled "Laughter Therapy for Blood Pressure in the Elderly with Hypertension" Data obtained the age of the majority of respondents in the intervention and control groups were 75-90 years old, as many as 7 people (70%). In the intervention group, the analysis of the pretest blood pressure results with a minimum systolic of 130/77, a maximum of 172/91, the mean value was 147.60 / 83.10 mmHg and the post-test results of

systolic blood pressure were a minimum of 117.71 / 70.43, a maximum of 128.00 / 73.71, the mean value was 124.24 / 72.08 mmHg, thus it can be seen that blood pressure has decreased.

Based on initial survey data in the Tanah Kampung Health Center work area, hypertension is the number one most common disease in the Tanah Kampung Health Center work area, it is stated that carrying out medical or pharmacological treatment to reduce blood pressure in addition to drug therapy, non-pharmacological treatment with Laughter Therapy. The results of the author's interview with three hypertensive patients, the patient said that if his illness recurred the patient felt dizzy and had a headache, and the patient only used antihypertensive drugs and had never been treated with laughter therapy. Based on the data presented above, the author is interested in conducting research on "The Application of Laughter Therapy in Reducing High Blood Pressure in Hypertensive Patients in the Elderly in the Tanah Kampung Health Center Work Area.

METHODOLOGY

This type of research uses quantitative research with experiments, namely the One Group Pretest Postes approach.). In this One Group Pretest Posttest design, there is a pretest measure given to respondents. Single pretest observations were carried out on a group of respondents who were then given treatment. After that, the researcher observed the respondents with a single posttest of the same size as before (Abdullah, et al., 2021:104).

The population in this study were elderly people with hypertension aged 60 years and over in the Tanah Kampung Health Center work area, totaling 216 people. The sample is part of the number and characteristics of the population. The sampling technique used was Experimental, namely a random design using the Federal formula, totaling 16 people.

RESULTS

Based on the results of research that has been conducted in the Tanah Kampung Health Center Work Area regarding the Application of Laughter Therapy in Lowering High Blood Pressure in Hypertension Patients in the Elderly, the results were obtained.

Table 1. Average Blood Pressure Before Being Given Laughter Therapy in Reducing High Blood Pressure in Elderly Hypertension Patients in the Tanah Kampung Health Center Work Area

Blood Pressure	Pretest		
	Mean	Standard Deviation	Min –Max
Systolic	163,75	3.873	160-170
Diastolic	103.13	3.594	100-110

Based on Table 1, the average systolic blood pressure of respondents (pretest) was 163.75 with a standard deviation of 3.873 the minimum systolic blood pressure was 160 and the maximum systolic blood pressure was 170. Meanwhile, the average diastolic blood pressure (pretest) was 103.13 with a standard deviation of 3.594 the minimum diastolic blood pressure was 100 and the maximum diastolic blood pressure was 110.

***Table 2.* Average Blood Pressure After Being Given Laughter Therapy in Reducing High Blood Pressure in Elderly Hypertension Patients in the Tanah Kampung Health Center Work Area**

Blood Pressure	Posttest		
	Mean	Standard Deviation	Min –Max
Systolic	142.50	4.082	135-150
Diastolic	91.25	2.887	85-95

Based on Table 2, the average systolic blood pressure of respondents (posttest) was 142.50 with a standard deviation of 4.082 the minimum systolic blood pressure was 135 and the maximum systolic blood pressure was 150. Meanwhile, the average diastolic blood pressure (pretest) was 91.25 with a standard deviation of 2.887 the minimum diastolic blood pressure was 85 and the maximum diastolic blood pressure was 95.

Table 3. Average Effect of Laughter Therapy in Reducing High Blood Pressure in Elderly People with Hypertension in the Tanah Kampung Health Center Work Area

Variable	Mean	Std.deviation (SD)	Std. Error Mean	95% CI	P value
Systolic Blood Pressure	21,250	2,887	0,722	19,712-22,788	0,000
Diastolic Blood Pressure	11,874	4,031	1,008	9,727-14,023	0,000

Based on Table 3, the results of the statistical test using the paired t-test for reducing systolic and diastolic blood pressure obtained a p-value = 0.000 ($p \leq 0.05$), so it can be concluded that there is an effect of laughter therapy in reducing high blood pressure in the elderly.

This study is in line with the study conducted by. Yossi Fitrina, et al., in (2022). Entitled "The Effect of Laughter Therapy on Blood Pressure in the Elderly with Hypertension in the Rasimah Ahmad Health Center Work Area, Bukittinggi City in 2022". The statistical test results obtained a p value of 0.000 systolic and 0.000 diastolic, so it can be concluded that there is an effect of laughter therapy on blood pressure in the elderly with hypertension in the Rasimah Ahmad Health Center Work Area, Bukittinggi City in 2022.

Laughter Therapy is a therapy to achieve joy in the heart which is released through the mouth in the form of laughter, a smile that decorates the face, a feeling of release and joy, an open chest, and smooth blood circulation so that it can prevent disease, maintain health, and relieve stress (Setyodi, Kushariyadi, 2011).

Laughter is needed by humans to restore the function of the adrenaline hormone back to normal, where someone who laughs will bring someone into a healthy state. The laughter that is done should be laughing without burden, truly losing thoughts (losing) with stress triggers (stressors) (Untari, 2018).

The physiological hypothesis states that laughter releases endorphins into circulation so that the body becomes more comfortable and relaxed. Endorphins are also known as body morphine which causes a comfortable and healthy sensation. When laughing, not only endorphins are released but many other positive hormones appear. The release of positive hormones will cause smooth blood circulation in the body so that the function of the organs runs normally. Simon shows that humor can influence the perception of elderly individuals about health and morals, related to a smooth aging process (Setyoadi, Kusharuyadi, 2011).

CONCLUSIONS

Based on the results of the research that has been conducted on the Application of Laughter Therapy in Lowering High Blood Pressure in Hypertensive Patients in the Elderly in the Tanah Kampung Health Center Work Area, it can be concluded that there is an effect of the application of laughter therapy in lowering high blood pressure in elderly hypertension sufferers in the Tanah Kampung Health Center work area, by showing the results of the statistical test obtained with a p-value of 0.000 ($p < 0.05$) meaning that there is a significant difference between the results of blood pressure, meaning there is an effect of laughter therapy in lowering high blood pressure in elderly hypertension sufferers in the Tanah Kampung Health Center work area.

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