

THE EFFECT OF LAUGHTER THERAPY ON BLOOD PRESSURE IN OLDER PEOPLE WITH HYPERTENSION

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ABSTRAK

Penuaan menyebabkan lansia mengalami berbagai masalah kesehatan, termasuk gangguan pada fungsi fisiologis. Hipertensi merupakan salah satu gangguan kesehatan yang sering dialami oleh lansia. Salah satu intervensi non farmakologis yang bisa diterapkan pada lansia dengan hipertensi adalah terapi tertawa. Penelitian ini dilakukan untuk mengetahui pengaruh terapi tertawa terhadap perubahan tekanan darah pada lansia penderita hipertensi. Metode penelitian yang digunakan adalah quasy experimental design dengan rancangan pretest-posttest nonequivalent groups design.. Penelitian ini melibatkan 46 subjek yang dibagi menjadi dua kelompok : kelompok perlakuan (menerima intervensi terapi tertawa) dan kelompok kontrol (tanpa intervensi terapi tertawa). Hasil uji Wilcoxon menunjukkan nilai $\rho = 0,000$, di mana $\rho < \alpha (0,05)$, yang berarti H1 diterima, sehingga terdapat efek terapi tertawa pada perubahan tekanan darah lansia dengan hipertensi. Untuk selanjutnya, di harapkan terapi tertawa yang dapat di aplikasikan di panti werdha ataupun posyandu lansia sebagai salah satu terapi modalitas untuk mengontrol penyakit hipertensi pada lansia

Kata Kunci : Hipertensi, Lansia, Terapi Tertawa

ABSTRACT

The aged are more susceptible to a number of health issues as they age, including disruptions in their physiological processes. Health problem which commonly experienced by the older people is Hypertension. Laughter therapy is one non-pharmacological strategy that can be used with senior hypertensive patients. This research was conducted to determine the effect of laughter therapy on changes in blood pressure in elderly people with hypertension. A pretest-posttest nonequivalent groups design was employed in this quasi-experimental study design. In this study, 23 participants in each group, which treatment group (get Laughter Therapy) and control group (didn't get Laughter Therapy). The findings of the Wilcoxon test indicate that $\rho = 0.000$, where $\rho < \alpha (0.05)$, indicates that H1 is accepted, indicating that laughter therapy has an impact on changes in blood pressure in older adults with hypertension. It is hoped that Laughter Therapy can be applied in Nursing Home or Integrated Service Post (Posyandu) for the elderly as a therapeutic modality to control hypertension in the elderly.

Keywords : Hypertension, Older People, Laughter Therapy

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INTRODUCTION

An older people is someone who has entered the final phase of life. The elderly age group will experience an aging process (Andriyani et al., 2015). Older adults will eventually see a deterioration in their physiological function as a result of aging, and this will affect their health issues. The elderly have a higher incidence of the following diseases: heart disease 4.5%, CVA 4.4%, diabetes mellitus 57%, hypertension 63.5%, kidney failure 0.8%, and cancer 0.4%. (Efendi et al., 2023). According to World Health Organization (WHO) data from 2015, 1.13 billion people worldwide have hypertension, and this number keeps rising year. By 2025, it's predicted that 1.5 billion people worldwide will have hypertension (Kartika et al., 2021). According to Risesdas, the prevalence of people with hypertension is 45.3% in the 45–54 age group, 63.2% in the 55–64 age group, and 69.5% in the 75 years and older (Ministry of Health of the Republic of Indonesia, 2018). In Tulungagung Regency, the expected number of individuals with hypertension who are at least 15 years old is 298,696. (Dinas Kesehatan Tulungagung, 2023).

An increase in renin, a decrease in the number of nephrons, a decrease in blood channel elasticity, and stiffness of heart valves are some of the short-term causes of the high incidence of hypertension in the elderly population (Bete et al., 2022). Uncontrolled hypertension will cause arteriosclerosis which causes reduced oxygen supply to the brain. A brain that experiences a lack of oxygen for a long time will cause brain cell death (Fitriana et al., 2023). CVA is one of the complications experienced by hypertension sufferers, the rest are heart disease, kidney failure and blindness (Nurhusna et al., 2018).

Handling of hypertension is generally done in 2 ways, which is pharmacological and non-pharmacological. Pharmacological therapy for hypertension's management is by administering anti-hypertension drugs. In the meantime, a low-salt diet, exercise based on ability, abstinence from alcohol, quitting smoking, and therapeutic modalities (progressive muscle therapy, yoga exercises, and laughter therapy) are some non-pharmacological methods of managing hypertension. (Bete et al., 2022).

Pharmacological therapy will have an impact, including side effects and dependence on hypertension sufferers. Pharmacological and non-pharmacological management is more effective in lowering blood pressure, compared to just 1 therapy (Nurhusna et al., 2018). The right combination of pharmacological and non-pharmacological therapy is more effective in lowering blood pressure compared to pharmacological therapy alone (Sari et al., 2022).

In non-pharmacological interventions, nurses play a role in preventing complications and recurrence in older people with hypertension. Laughter therapy is a non-pharmacological therapy that can be given to control blood pressure. This is because the body releases endorphins so that the body is more relaxed, so that blood pressure can decrease (Sari et al., 2022). The endorphin hormone is morphine which provides a comfortable and relaxing sensation in the body. Laughter therapy carried out regularly can increase the release of endorphins and reduce the release of epinephrine, catecholamines, vasopressin, cortisol and other hormones that have vasoconstrictive properties and provide a relaxing effect. This is what can make laughter therapy able to control stress and blood pressure (Kezia et al., 2020).

This study aims to provide alternative non-pharmacological therapy for elderly people with hypertension. It is hoped that the combination of pharmacological and non-pharmacological therapy can improve the health and life expectancy of the elderly.

RESEARCH METHOD

This research began with preparing a proposal in the first month, collecting research data in the second and third months, processing and analyzing data in the fourth and fifth months, and

preparing a research report in the sixth month. This study used a pretest-posttest nonequivalent groups design in a quasi-experimental setting. Pre- and post-tests were given to the intervention group in this study, but no therapy was given to the control group. Using total sampling as a sampling technique, 46 older with hypertension subjects were sorted into 23 intervention groups and 23 control groups. The study was carried out at Tulungagung Regency's Rejosari Village, Gondang District. Data collection was carried out using the Standard Operating Procedure (SOP) instrument for laughter therapy, while the blood pressure observation before and after the laughter therapy measured by a digital blood pressure device then documented on a blood pressure observation sheet. Intervention is given for 30 minutes per meeting, 2 times a week for 3 weeks. The Wilcoxon test was utilized in both univariate and bivariate data analysis. The Bhakti Wiyata Kediri Institute of Health Sciences' Research Ethics Commission has deemed this study ethically feasible with No. 172/FIK/KEP/III/2023.

RESULT

Table 1 Distribution of Respondent Characteristics Based on Age of the Intervention Group and Control Group

Intervention Group			Control Group		
Ages (years old)	Freq.	Percentage (%)	Ages (years old)	Freq.	Percentage (%)
45-59	0	0	45-59	0	0
60-74	23	100	60-74	23	100
74-90	0	0	74-90	0	0
>90	0	0	>90	0	0
Total	23	100	Total	23	100

Table 1 demonstrates that most respondents in the intervention group and control group were between the ages of 60 and 74.

Table 2 Distribution of Respondent's Gender

Intervention Group			Control Group		
Gender	Freq.	Percentage (%)	Gender	Freq.	Percentage (%)
Male	4	17,4	Male	7	30,4
Female	19	82,6	Female	16	69,6
Total	23	100	Total	23	100

Table 2 demonstrates that women made up the majority of respondents in both the control and intervention groups.

Table 3 Blood Pressure Observational Results

Blood Pressure Category	Pre-test/ Post-test	Meeting	Freq. (n)	Percentage (%)
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Pre-test	1	21	91,3
Phase 2 Hypertension			2	8,7

Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Post-test	1	21	91,3
Phase 2 Hypertension			2	8,7
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Pre-test	2	22	95,7
Phase 2 Hypertension			1	4,3
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Post-test	2	22	95,7
Phase 2 Hypertension			1	4,3
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Pre-test	3	22	95,7
Phase 2 Hypertension			1	4,3
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Post-test	3	22	95,7
Phase 2 Hypertension			1	4,3
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Pre-test	4	22	95,7
Phase 2 Hypertension			1	4,3
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Post-test	4	21	91,3
Phase 2 Hypertension			2	8,7
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Pre-test	5	22	95,7
Phase 2 Hypertension			1	4,3
Normal			0	0
Pre-hypertension			23	100
Phase 1 Hypertension	Post-test	5	22	95,7
Phase 2 Hypertension			1	4,3
Normal			0	0
Pre-hypertension			0	0
Phase 1 Hypertension	Pre-test	6	21	0
Phase 2 Hypertension			2	0
Normal			0	0
Pre-hypertension			23	100
Phase 1 Hypertension	Post-test	6	0	0
Phase 2 Hypertension			0	0

The blood pressure changes of participants in the intervention group before and after each meeting's laughter therapy are displayed in Table 3. At every meeting, the participants' blood pressure readings decreased.

Table 4 Wilcoxon signed-rank test for Blood Pressure Data Analysis

Pre-test / Post-test	Blood Pressure	Groups	Meeting	Frequency	Mean	ρ value
Pre-test	Systolic	Intervention Group	1	23	150,70	0,000
Post-test					135,26	
Pre-test	Diastolic				94,35	0,000
Post-test					84,35	
Pre-test	Systolic	Intervention Group	2	23	149,43	0,000
Post-test					135,17	
Pre-test	Diastolic				93,26	0,000
Post-test					84,30	
Pre-test	Systolic	Intervention Group	3	23	149,22	0,000
Post-test					133,70	
Pre-test	Diastolic				93,52	0,000
Post-test					83,87	
Pre-test	Systolic	Intervention Group	4	23	150,35	0,000
Post-test					133,96	
Pre-test	Diastolic				92,96	0,000
Post-test					83,26	
Pre-test	Systolic	Intervention Group	5	23	150,35	0,000
Post-test					133,26	
Pre-test	Diastolic				93,96	0,000
Post-test					83,52	
Pre-test	Systolic	Intervention Group	6	23	151,09	0,000
Post-test					134,65	
Pre-test	Diastolic				93,74	0,000
Post-test					83,78	

The results of the Wilcoxon test for the first through sixth meeting of the intervention group respondents' blood pressure are displayed in Table 4. Given that $\rho < \alpha$, $\alpha = 0.05$, the significant value (ρ) was 0.000, indicating that H1 was accepted and that providing laughter therapy had an impact on blood pressure in the elderly with hypertension..

DISCUSSION

The occurrence of hypertension is influenced by age. This research found that, most respondents are between 60 and 74 years old. Growing older raises the risk of hypertension, according to Maulidina et al. (2019) in Pratama et al. (2020). This is caused by several factors such as changes in the heart and blood vessels that occur due to the aging process. The elderly are frequently affected by this degenerative chronic condition, which is brought on by problems with the blood circulation system (Rauf et al., 2021). Increasing age causes changes in the elasticity of blood vessels which have an impact on the narrowing of blood vessels so that blood flows quickly or more commonly known as an increase in blood pressure (Sari et al., 2022).

The gender in this study was mostly female and had hypertension. The increase in hypertension in women compared to men is related to the decrease in the hormone estrogen during menopause. For women, this hormone protects blood vessels from cardiovascular disease (Sari et al., 2022). The incidence of hypertension in women increases after entering menopause. This is due to hormonal changes experienced by menopausal women. When women enter menopause, the production of the

hormone estrogen declines, and this hormone contributes to elevated levels of HDL (high-density lipoprotein). Atherosclerosis is halted in part by high density lipoprotein (HDL) levels. (Yunus et al., 2021). Atherosclerotic plaque causes the oxygen supply to the tissues to decrease so that the body will compensate by increasing heart function which will give clinical manifestations in the form of increased blood pressure (Rafsanjani et al., 2019). Women aged 60 years and over and who have gone through menopause are also at risk of feeling anxious. This anxiety can make it difficult to sleep which will result in increased blood pressure (Bete et al., 2022).

An effective non-pharmacological option for elderly hypertensive patients is laughter therapy. According to the study's findings, 23 participants had a drop in blood pressure after receiving laughter therapy for 30 minutes twice a week for three weeks. Research by Ummah & Hidayah (2017) states that laughing for 5-10 minutes can stimulate endorphin and serotonin hormones, which are the body's natural morphine (Umamah & Hidayah, 2017). These hormones are good for the brain, providing a calming effect and lowering blood pressure. The goal of laughter therapy is to increase the parasympathetic nervous system and reduce the sympathetic nervous system by having patients make laughing sounds and perform motor movement activities. Apart from that, forming a face with a certain expression will cause positive emotions (Sari et al., 2022). Laughter is a stimulus to the limbic system in the central nervous system, especially the brain, so that the work of the cardiovascular system is controlled. Laughter therapy can reduce the release of the hormone epinephrine, catecholamine vasopressin, cortisol and other hormones that have vasoconstrictive properties in blood vessels which have the effect of reducing blood pressure (Herliawati & Girsang, 2017). Kataria (2004) in Kezia (2020) states that this laughing therapy method has benefits as anti-stress, strengthening the immune system, anti-depression, anti-anxiety, lowering high blood pressure and heart disease as well as a natural pain reliever (Kezia et al., 2020).

CONCLUSION

Laughter therapy intervention had a significant effect on blood pressure reduction in older adults with hypertension ($\rho = 0.000$, $\rho < \alpha (0.05)$), so that laughter therapy can be used as an alternative non-pharmacological therapy for elderly people who suffer from hypertension. As a result, this can contribute to improving health and extending the life expectancy of elderly people with hypertension.

SUGGESTION

Nursing staff can use laughter therapy as a complementary therapy for elderly people with hypertension.

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