INDOGENIUS

ISSN 2828-1365

Volume 4, Issue 2 : 436-448

The Effect of Progressive Muscle Relaxation Therapy and Deep Breath Relaxation on Lowering Blood Pressure in Hypertension Patients in Selajambe Village, Selajambe District, Kuningan Regency in 2024

Rastipiati[1], Moch. Didik Nugraha[1], Dea Nur Alifah[1]
[1]*Universitas Bhakti Husada, Indonesia*

Article Info

Keywords :
Progressive Muscle Relaxation, Deep Breath Relaxation, Hypertension

Corresponding Author :
Rastipiati
E-mail :
rasti.mkepumy@gmail.com

ABSTRACT

Background & Objective: Hypertension is a disease that causes premature death in the world. West Java Province ranks second with the most hypertension patients with a prevalence of 39.60%. Treatment of hypertension uses pharmacological therapy which can be combined with non-pharmacological therapies such as relaxation therapy. Currently, the belief of hypertension sufferers in chemical drugs is decreasing, and increasing treatment using complementary therapies. This study aims to determine the effect of progressive muscle relaxation therapy and deep breath relaxation on reducing high blood pressure in hypertensive patients in Selajambe village, Kuningan Regency, 2024. **Method:** This type of research is an analytic quasy experiment design with pre-test and post-test design. The population was 168 hypertensive patients with purposive sampling technique. Bivariate analysis using the T test. **Result:** The results showed that the average blood pressure before being given progressive muscle relaxation was 160.1/101.7mmHG which decreased to 135.6/79.35. The results of deep breath relaxation were 155.9/95.20mmHg decreased to 147.0/87.20mmHg. T test on progressive muscle relaxation obtained p-value = 0.000 on systole blood pressure and p-value = 0.006 on diastole blood pressure. The results of deep breath relaxation obtained p-value = 0.011 on systole blood pressure and p-value = 0.002 on diastole blood pressure (<0.05). **Conclusion:** There is an effect of progressive muscle relaxation therapy and deep breath relaxation on reducing high blood pressure in hypertensive patients in Selajambe village,

Kuningan Regency, 2024. Hypertensive patients can combine drug therapy and relaxation as part of controlling blood pressure.

DOI: https://doi.org/10.56359/igj.v4i2.581

Introduction

Hypertension or high blood pressure is an abnormal increase in blood pressure in arterial blood vessels continuously over a period. This condition causes the blood vessels to continuously increase pressure. Hypertension is also known as the "silent killer" even though people who have hypertension have no symptoms at all (Kemenkes RI, 2020).

Based on data from WHO in 2020, hypertension is one of the diseases that is a factor in causing premature death in the world. Worldwide there are 1.13 billion people who experience high blood pressure, this means that out of 3 people in the world there is 1 person who has hypertension (Ding et al., 2022). Based on data from the Ministry of Health 2021, it states that the incidence of hypertension in Indonesia has increased from 26.3% of sufferers in 2013 to 35.1% in 2020 (Kemenkes RI, 2021).

Based on the results of Riskesdas in 2018, the prevalence of hypertension in Indonesia was 34.11%, the estimated number of hypertension cases in Indonesia was 63,309,620 people while the death rate in Indonesia due to hypertension was 427,218 deaths. (Indonesian Ministry of Health, 2019). West Java Province ranks second in the number of people with hypertension after South Kalimantan with a prevalence rate of 39.60%.

Based on data from the Kuningan Health Office report in 2023 the prevalence of hypertension cases was around 88,047 people from 37 health centers in Kuningan Regency. Based on data from the Selajambe Health Center in 2023 a total of 1132 people with hypertension. Based on the data that has been obtained so that this research takes place in Selajambe District.

The high incidence of hypertension can be caused by influencing factors divided into two major groups, namely factors that cannot be controlled and factors that can be controlled. Some factors that cannot be controlled such as gender, age, genetics, race. While factors that can be controlled are diet, diabetes mellitus, exercise habits, consumption of salt, coffee, alcohol and stress. So it is necessary to provide pharmacological and non-pharmacological therapy.

The provision of pharmacological therapy in hypertension is by taking drugs regularly such as amlodipine or captropil. While non-pharmacological therapy can be done by exercising, ergonomic exercises, low salt diet, rest time management, stress management, and relaxation. Relaxation therapies that are commonly done include alternatenostril breathing, diaphragmatic breathing, and slow deep breathing, progressive muscle relaxation (Hartono, 2011) in (Anshari, 2020).

Progressive muscle therapy is useful for reducing peripheral resistance and increasing vascular elasticity. Muscles and blood circulation will be more perfect in taking and circulating oxygen and progressive muscle relaxation can occur vasodilators whose effect widens blood vessels and can reduce blood pressure directly (Murhan & Nursing Poltekkes Tanjungkarang, 2020).

Based on preliminary studies conducted by researchers in the Selajambe Health Center Working Area, namely in Selajambe village, only a few respondents take hypertension medication if their blood pressure is high, symptoms of dizziness appear, the head feels heavy but activities are not hampered by enough rest and sleep. The results of a small interview with 15 people did not know Progressive Muscle Relaxation Therapy, most respondents did not know the benefits of Progressive Muscle Relaxation Therapy could help lower blood pressure.

Objective

Based on the background of these problems, researchers feel it is important for Progressive Muscle Relaxation Therapy which is carried out 5-10 minutes to reduce blood pressure, this intervention can be done at home and independently.

Method

The type of research is analytic *quasy experiment* design with *pre-test* and *post-test design.* The population was 168 hypertensive patients with *purposive sampling* technique. Bivariate analysis using the *T test. Spearman Rank.*

Results

TABLE 1. Average blood pressure before and after being given progressive muscle relaxation therapy in hypertensive patients in Selajambe Village, Selajambe District, Kuningan Regency

Blood Pressure	Before				After			
	Mean	Median	Std Deviation	Min-Max	Mean	Median	Std Deviation	Min-Max
Systole	160,1	157,5	13,47	143-186	135,6	135	3,80	130-140
Diastole	101,7	97,00	13,67	86-125	79,35	85,50	5,66	70-90

Table 1 shows that the average systolic blood pressure before being given progressive muscle relaxation therapy is 160.1 has decreased after being given therapy to 135.6. After being given progressive muscle relaxation therapy. shows the average diastole blood pressure before being given progressive muscle relaxation therapy is 101.7 decreased after being given therapy to 79.35.

TABLE 2. Average blood pressure before and after being given deep breath relaxation therapy in hypertensive patients in Selajambe Village, Selajambe District, Kuningan Regency

Blood Pressure	Before				After			
	Mean	Median	Std Deviation	Min-Max	Mean	Median	Std Deviation	Min-Max
Systole	155,9	156,0	11,49	140-180	147,0	145,0	6,88	137-156
Diastole	95,20	97,00	4,46	89-100	87,20	86,00	5,96	80-97

Table 2 shows that the average systolic blood pressure before being given deep breath relaxation therapy is 155.9 has decreased after being given therapy to 147.0, showing the average systolic blood pressure before being given deep breath relaxation therapy is 95.20 has decreased after being given therapy to 87.20.

TABLE 3. The effect of Progressive Muscle Relaxation on lowering blood pressure in hypertensive patients in Selajambe village, Selajambe District, Kuningan Regency

Blood Pressure	Before	After	p-value

	Mean	*Standard deviation*	*Mean*	*Standard deviation*	
Systole	160,10	13,47	125,60	3,80	0,000
Diastole	101,70	13,67	83,40	5,66	0,006

Based on table 3, the results of the Paired T Test obtained p-value = 0.000 (<0.05) on systolic blood pressure and p-value = 0.006 on diastolic blood pressure. This means that there is an effect of progressive muscle relaxation on reducing systolic and diastolic blood pressure in hypertensive patients in Selajambe village, Selajambe District, Kuningan Regency.

TABLE 4. The effect of Deep Breath Relaxation on lowering blood pressure in hypertensive patients in Selajambe village, Selajambe District, Kuningan Regency.

Blood Pressure	Before		After		p-value
	Mean	*Standard deviation*	*Mean*	*Standard deviation*	
Systole	155,90	11,49	147,00	6,88	0,011
Diastole	95,20	4,46	87,20	5,69	0,002

Based on table 4, the results of the Paired T Test test obtained p-value = 0.011 (<0.05) on systolic blood pressure and p-value = 0.002 on diastolic blood pressure, meaning that there is an effect of deep breath relaxation on reducing systolic and diastolic blood pressure in hypertensive patients in Selajambe village, Selajambe District, Kuningan Regency.

TABLE 5. Mean difference in systolic and diastolic pressure in progressive muscle relaxation and deep breath relaxation groups

Systole	*Mean*	*p-value*
Progressive muscle therapy	147,00	0,000
Deep breath therapy	135,60	
Diastole	*Mean*	0,152
Progressive muscle therapy	87,20	
Deep breath therapy	83,40	

Based on table 5, the results of the independent T test on systolic blood pressure obtained p-value = 0.000 (<0.05) means that there is a difference in systolic blood pressure in the progressive muscle relaxation group with deep breath relaxation. In diastolic blood pressure based on the results of the independent T test on systole blood pressure obtained p-value = 0.152 (>0.05) means that there is no difference in systolic blood pressure in the progressive muscle relaxation group with deep breath relaxation.

Discussion

Overview of Blood Pressure Before Progressive Muscle Relaxation Therapy in Hypertension Patients in Selajambe Village, Selajambe District, Kuningan Regency

The results showed that the average systole blood pressure before being given progressive muscle relaxation therapy was 160.1, the standard deviation before progressive muscle relaxation therapy was 13.47. Research conducted (Aminiyah et al., 2022) showed systolic blood pressure before ROP showed an average value of 133.13 mmHg with a minimum value of 100 mmHg and a maximum of 190 mmHg.

Blood pressure is the pressure that comes from blood and is pumped by the heart over the arterial wall. Blood pressure is divided into systolic and diastolic blood

pressure. When the ventricles contract and eject blood into the arteries, it is called systolic blood pressure. When the ventricles relax and the atria drain blood into the ventricles, it is called diastolic blood pressure (Wulandari & Samara, 2023).

Hypertension can be caused by several risk factors, namely: Gender, obesity, smoking, stress, exercise, diet, rest, heredity, alcohol consumption, and kidney disease. This individual with a family history of hypertension has a 2 times greater risk and suffers from hypertension than people who do not have a family history of hypertension (Rahmadhani, 2021).

Age is one of the risk factors for hypertension that cannot be modified. The incidence of hypertension increases by 50-60% at the age of more than 60 years, which has a blood pressure of more than 140/90 mmHg (Azizah et al., 2021). The aging process is a process related to a person's age. After the age of 55 years, the artery wall will thicken due to the accumulation of collagen substances in the muscle layer so that the blood vessels will gradually narrow and become stiff. In addition, along with the aging process, physiological deterioration occurs which causes large arteries to lose their flexibility and become stiff, unable to expand when the heart pumps blood through these arteries. Blood at each heart pump is forced through a narrower venous space than causing an increase in blood pressure in the elderly (Adam, 2019).

The results showed that the average diastole blood pressure before being given progressive muscle relaxation therapy, namely 101.7, decreased after being given therapy to 79.35 standard deviation before progressive muscle relaxation therapy, namely 13.67. Yudanari's research (2021) showed results in Diastolic blood pressure before progressive muscle relaxation therapy was carried out at 94.35mmHg, and after being given progressive muscle relaxation therapy to 85.76 mmHg.

Another factor that causes increased blood pressure is salt intake, because high sodium consumption can shrink the diameter of the arteries, so the heart has to pump harder to push the increased blood volume. Through the narrower space that causes hypertension, the effect of salt intake on hypertension also occurs through increased plasma volume and blood pressure. Another factor that can increase blood pressure is smoking behavior. In cigarettes there is nicotine content which is absorbed into the small blood vessels in the lungs so that it is circulated to the brain, in the brain. will act with nicotine by signaling the adrenal glands so that they can release epinephrine (adrenaline), this hormone will constrict blood vessels so that the heart is forced to work harder and cause high blood pressure (Rahmadhani, 2021).

The researcher's assumption is that the elderly are at risk of hypertension because what happens is that the artery walls thicken and stiffen due to arteriosclerosis. When age increases, the possibility of someone suffering from hypertension is also greater besides having other risk factors such as smoking behavior, and high salt intake.

Overview of Blood Pressure Before Deep Breath Relaxation Therapy in Hypertension Patients in Selajambe Village, Selajambe District, Kuningan Regency

The results showed that the average systole blood pressure before being given deep breath relaxation therapy was 155.9, the standard deviation before deep breath relaxation therapy was 11.49, the minimum and maximum values before therapy were

140-180. Shows the average systole blood pressure before being given deep breath relaxation therapy is 95.20, standard deviation before deep breath relaxation therapy is 4.46, minimum and maximum values before therapy are 89-100.

Research conducted (Tandialo & Asfar, 2022) showed that before being given the deep breath relaxation technique the average was 161.33 mmHg with a standard deviation of ± 18.653, the lowest value was 140 mmHg and the highest was 202 mmHg. The average pretest diastolic blood pressure was 98.47 mmHg with a standard deviation of ±8.749, the lowest value was 90 and the highest was 118 mmHg. Another factor that affects hypertension is gender, there is a relationship between gender and hypertension, a higher risk in women than men due to hormonal differences, women are more often affected at an advanced age due to reduced estrogen. In women who have menopause, the hormone estrogen plays a role in increasing High Density Lipoprotein (HDL) levels and making blood vessels elastic.

The next factor is the level of stress, stress is fear and anxiety, if something threatens the pituitary brain gland will send endocrine gland hormones into the blood, these hormones function to activate the hormones adrenaline and hydrocortisone so that the body can adjust to the changes that occur, activation of the adrenaline hormone makes the heart work stronger and faster, increases blood flow to other organs, and if stress occurs for a long time, cardiovascular hypertrophy will occur, this hormone also affects the increase in blood pressure resulting in hypertension (Rahmadhani, 2021).

In addition, physical activity factors affect hypertension. There is a relationship between exercise and the incidence of hypertension, because regular exercise is needed because it can reduce blood vessel stiffness, increase heart and lung endurance. so that it can lower blood pressure, improve the work and function of the heart, lungs and blood vessels characterized by a decrease in resting pulse rate, increase HDL cholesterol, reduce atherosclerosis (Rahmadhani, 2021). A person who has a family with hypertension is at risk of increasing blood pressure. This is consistent with research that a close family history increases the risk of hypertension. Hypertension has a tendency to be passed on to the next generation. This risk factor cannot be eliminated but can be adapted by diligently performing blood pressure control, meaning that all people who have a family history of hypertension will definitely suffer from hypertension. In addition to these genetic factors, hypertension can also be influenced by other factors. family history factors can be minimized by maintaining a healthy lifestyle, namely exercise, diet, avoiding stress (Widiharti & Fitrianur, 2020).

The effect of Progressive Muscle Relaxation on Decreasing Blood Pressure in Hypertension Patients in Selajambe Village, Selajambe District, Kuningan Regency

The results showed that the average systolic blood pressure before being given progressive muscle relaxation therapy was 160.1 decreased after being given therapy to 135.6, the standard deviation before progressive muscle relaxation therapy was 13.47, after being given progressive muscle therapy to 3.80. The minimum and maximum values before therapy were 143-186 decreased to 130-140 after being given progressive muscle relaxation therapy. In diastolic blood pressure, it shows that the average diastolic blood pressure before being given progressive muscle relaxation therapy is 101.7 has decreased after being given therapy to 79.35 standard deviation

before progressive muscle relaxation therapy is 13.67, after being given progressive muscle therapy to 5.66. The minimum and maximum values before therapy were 86-125 which dropped to 70-90 after being given progressive muscle relaxation therapy.

In line with research conducted by Aminiyah (Aminiyah et al., 2022) showed the results of systole blood pressure examination before ROP showed an average value of 133.13 mmHg with a minimum value of 100 mmHg and a maximum of 190 mmHg. While the value of systole blood pressure after ROP showed an average value of 120.63 mmHg with a minimum value of 100 mmHg and a maximum of 160 mmHg. This shows that there is a decrease in the value before and after ROP by 12.5 mmHg. The results of diastole blood pressure examination before ROP showed an average value of 83.33 mmHg with a minimum value of 60 mmHg and a maximum of 110 mmHg. While the diastole blood pressure value after ROP showed an average value of 81.46 mmHg with a minimum value of 60 mmHg and a maximum of 100 mmHg. This shows that there is a decrease in the value before and after ROP by 1.87 mmHg.

When doing progressive muscle relaxation, there is a decrease in the release of CRH (*Corticotropin Releasing Hormone*) and ACTH (*Adrenocorticotropic Hormone*) in the hypothalamus. A decrease in the release of these two hormones can reduce sympathetic nerve activity, reducing the release of adrenaline and non-adrenaline. This causes a decrease in heart rate dilation of blood vessels, decreased vascular resistance, decreased heart pump and decreased arterial pressure in the heart resulting in a decrease in blood pressure (Yunding et al., 2021).

According to (Fitrianti & Putri, 2018) progressive muscle relaxation is done by tensing the muscles and then relaxing them. This progressive muscle relaxation consists of 15 movements. The muscles that work when doing progressive muscle relaxation are the hand muscles, biceps muscles, shoulder muscles, facial muscles, muscles around the mouth, neck muscles, back muscles, chest muscles, abdominal muscles and leg muscles. Each movement of progressive muscle relaxation aims to tense the muscles and then relax.

Based on the results of the Paired T Test test on systolic blood pressure obtained p-value = 0.000 (<0.05) and on diastolic blood pressure obtained p-value = 0.006 (<0.05) meaning that there is an effect of progressive muscle relaxation on reducing systolic and diastolic blood pressure in hypertensive patients in Selajambe village, Selajambe District, Kuningan Regency.

Progressive muscle relaxation can reduce the activity of the sympathetic nervous system. There is a link between smoking and generational history with hypertensive events. This can be applied by respondents and families in helping to lower blood pressure efficiently and efficiently by avoiding aspects that can be avoided (Suprapto et al., 2021). Progressive muscle relaxation is carried out to reduce existing tension so that the body and mind will become more relaxed due to a reduction in work activity on sympathetic nerves which causes a decrease in heart rate and accelerates blood circulation resulting in a decrease in blood pressure. Progressive muscle relaxation makes blood pressure, pulse and respiratory frequency decrease so that the psychological state will also be affected which makes systemic and pulmonary circulation work when there is stimulation from sympathetic nerves that work together with the respiratory system so that systolic blood pressure (Dismiantoni et al., 2019).

Diastolic blood pressure is related to coronary circulation, so that if there is a buildup that can block blood circulation in the coronary arteries, diastolic blood pressure increases. Therefore, progressive muscle relaxation is carried out so that there is no accumulation in the coronary arteries so that there is a decrease in diastolic blood pressure (Gunawan, G., & Satria, 2020). When the body returns to a more relaxed state after performing progressive muscle relaxation, blood circulation in the coronary arteries becomes smoother because previously the body was tense so that diastolic blood pressure can decrease. Progressive muscle relaxation performed 3 times a week for 30 minutes in the elderly can reduce the average systolic blood pressure of 136, 09 mmHg and the average diastolic blood pressure of 89, 35 mmHg (Sutamiyanti N, Suniya Dewi, 2020). Progressive muscle relaxation performed 2 times a day for 3 days can reduce the average systolic blood pressure of 137.81 mmHg and the average diastolic blood pressure of 84.37 mmHg (Naufal & Khasanah, 2020).

Progressive muscle relaxation will reduce muscle tension, reduce anxiety, reduce neck and back pain, lower high blood pressure and reduce heart frequency. Therefore, there will be a decrease in blood pressure because the body returns to a feeling of relaxation, calm, not too much burden on the mind and this situation is what makes blood pressure can decrease in the elderly suffering from hypertension and that there is a relationship between exercise and stress on the incidence of hypertension in the elderly (Ladyani et al., 2021).

The Effect of Deep Breath Relaxation on Decreasing Blood Pressure in Hypertension Patients in Selajambe Village, Selajambe District, Kuningan Regency

The results showed the average value of systolic blood pressure before being given deep breath relaxation was 155.90 and after being given deep breath relaxation therapy to 147.00. The mean difference value between before and after being given deep breath relaxation therapy is 8.9. Based on the results of the Paired T Test test, the p-value = 0.011 (<0.05) means that there is an effect of deep breath relaxation on reducing systolic blood pressure in hypertensive patients in Selajambe village, Selajambe District, Kuningan Regency. In diastole blood pressure, the average value of diastole blood pressure before being given deep breath relaxation is 95.20 and after being given deep breath relaxation therapy to 87.20 The mean difference value between before and after being given deep breath relaxation therapy is 8. Based on the results of the Paired T Test test, the p-value = 0.002 (<0.05) means that there is an effect of deep breath relaxation on reducing diastolic blood pressure in hypertensive patients in Selajambe village, Selajambe District, Kuningan Regency.

In line with the results of research (Yuliandra et al., 2023) showed the results of statistical tests with the Paired test Samples test the resulting P value of 0.000 <0.05, it was concluded that there was an effect of deep breath relaxation method on blood pressure shrinkage in patients with essential hypertension in the Sukabumi Health Center working area.

Relaxation therapy can reduce blood pressure and without any side effects or contra indications as in therapy using anti-hypertensive drugs. Through relaxation techniques such as deep breath relaxation techniques will automatically stimulate the sympathetic nervous system to reduce levels of ketocolamine which is a substance

that can cause constriction of blood vessels so that it can cause increased blood pressure (Khomsah, I. Y., & Wulan, 2023).

When the activity of the sympathetic nervous system decreases due to the relaxation effect, the production of catecholamine substances will decrease, causing dilatation of blood vessels and eventually blood pressure decreases. In lowering blood pressure, it should be done first with non-pharmacological methods, namely deep breath relaxation techniques, if you use pharmacological methods too often such as giving anti-hypertensive drugs, it is feared that it will cause the impact of dependence on drugs and over time will make the system work harder (Khomsah, I. Y., & Wulan, 2023).

The deep breath relaxation method is one of the relaxation treatments that can make the body more calm and harmonious, and can empower the body to overcome obstacles to attack it. The method of deep breath relaxation is a method for carrying out deep breaths, slow breaths (optimal inspiration) and how to exhale for a long time. The deep breath relaxation method can also increase lung ventilation and increase blood oxygen. Non-pharmacological management of deep breath relaxation treatment to lower blood pressure in people with hypertension is selected because deep breath relaxation treatment can be tried independently, is relatively easy to try than other non-pharmacological treatments, does not require a long time for treatment and can reduce the adverse effects of pharmacological treatment for people with hypertension (Parinduri, 2020).

Blood Pressure Differences in Progressive Muscle Relaxation and Deep Breath Relaxation in Hypertension Patients in Selajambe Village, Selajambe District, Kuningan Regency

The results of the independent T test on systolic blood pressure obtained p-value = 0.000 (<0.05) means that there is a difference in systolic blood pressure in the progressive muscle relaxation group with deep breath relaxation. In diastolic blood pressure based on the results of the independent T test on systolic blood pressure, the p-value = 0.152 (>0.05) means that there is no difference in systolic blood pressure in the progressive muscle relaxation group with deep breath relaxation (Norma & Supriatna, 2019).

The difference in blood pressure reduction in respondents who were given progressive muscle relaxation therapy intervention and respondents who were given deep breath relaxation technique intervention occurred because of the way each intervention worked in providing treatment. The difference that occurs because ACTH (*adrenocorticotropic hormone*) and CRH (*cotricotropin releasing hormone*) in the hypothalamus gland decreases. The decrease in the secretion of these two hormones causes sympathetic nerve activity to decrease so that the release of adrenaline and noradrenaline hormones decreases, resulting in a decrease in heart rate, dilated blood vessels, reduced blood vessel resistance and decreased heart pumping so that the heart arterial blood pressure decreases. Progressive muscle relaxation therapy and deep breath relaxation techniques can reduce blood pressure, from the average decrease in Nurman's research on progressive muscle relaxation therapy systolic 19.33 mmHg and diastolic 5.34 mmHg while the decrease in blood pressure in respondents of deep breath relaxation techniques systolic 14 mmHg and diastolic 8.67 mmHg

which means that orogressive muscle relaxation therapy is more effective in reducing blood pressure in people with hypertension (Nurman, 2019).

The use of deep breath relaxation can relax the body and reduce stress and anxiety felt through relaxation. Deep breath relaxation is effective in reducing oxygen consumption, metabolism, respiratory rate and heart activity as well as muscle tension and blood pressure through relaxation (Mangapi & Pabebang, 2022). While the technique called progressive muscle relaxation is a systematic approach to achieving neural activity, which is achieved by applying the method of stretching and releasing muscles with gradual and continuous repetition in musculoskeletal exercises.

Researchers assume, progressive muscle therapy and deep breath relaxation can reduce systole and diastole blood pressure so that a person with hypertension is expected to always apply healthy hydep behavior and apply non-pharmacological techniques such as progressive muscle and deep breath relaxation which are safer to reduce blood pressure which can be done independently or together and do not cause side effects such as antihypertensive drugs. This progressive muscle relaxation and deep breathing if done correctly and routinely every one to two times a day, namely every morning and evening can help reduce blood pressure and improve body health.

Conclusion

There is an effect of progressive muscle relaxation therapy and deep breath relaxation on reducing high blood pressure in hypertensive patients in Selajambe village, Kuningan Regency, 2024. Suggestions, people with hypertension can combine drug therapy and relaxation as part of controlling blood pressure.

References

1. Adam, L. (2019). Determinan Hipertensi Pada Lanjut Usia. Jambura Health and Sport Journal, 1(2), 82–89. https://doi.org/10.37311/jhsj.v1i2.2558
2. Aminiyah, R., Ariviana, I. S., Dewi, E. W., Fauziah, N. H., Kurniawan, M. A., Susumaningrum, L. A., & Kurdi, F. (2022). Efektivitas Pemberian Teknik Relaksasi Otot Progresif Terhadap Tekanan Darah pada Lansia di UPT PSTW Jember. Jurnal Keperawatan Florence Nightingale, 5(2), 43–49. https://doi.org/10.52774/jkfn.v5i2.106
3. Andri, J., Permata, F., Padila, P., Sartika, A., & Andrianto, M. B. (2021). Penurunan Tekanan Darah pada Pasien Hipertensi Menggunakan Intervensi Slow Deep Breathing Exercise. Jurnal Keperawatan Silampari, 5(1), 255–262.
4. Anshari, Z. (2020). Komplikasi Hipertensi Dalam Kaitannya Dengan Pengetahuan Pasien Terhadap Hipertensi Dan Upaya Pencegahannya. Jurnal Penelitian Keperawatan Medik, 2(2), 54–61. https://doi.org/10.36656/jpkm.v2i2.289
5. Apriliani, M. W., & Jamaludin. (2019). Penerapan Terapi Progressive Muscle Relaxation (PMR) Dalam Menurunkan Tekanan Darah Pada Lansia Dengan Hipertensi Di Desa Wangunrejo KecamatanMargorejo Kabupaten Pati. Jurnal Profesi Keperawatan, 6(2), 145–162.
6. Ding, D., Carson, V., Hunter, R. F., Jáuregui, A., Kolbe-Alexander, T., Lee, E. Y., Mair, J. L., Mielke, G. I., Oyeyemi, A.L., Varela, A. R., Salvo, D., Siefken, K., Tassitano, R. M., van Sluijs, E., & Hallal, P. C. (2022). Science has no Borders, so Should Scientific Publishing: A Position Statement from the Journal of Physical

Activity and Health. Journal of Physical Activity and Health, 19(12), 809–810. https://doi.org/10.1123/jpah.2022-0570
7. Dismiantoni, N., Triswanti, N., & Kriswiastiny, R. (2019). Atikel Penelitian Hubungan Merokok Dan Riwayat Keturunan Dengan Kejadian Hipertensi Relationship between Smoking and Hereditary History with Hypertension Artikel info Artikel history. Juni, 11(1), 30–36. https://doi.org/10.35816/jiskh.v10i2.214
8. Fitrianti, S., & Putri, M. E. (2018). Pemberian Relaksasi Otot Progresif pada Lansia Dengan Hipertensi Essensial di Kota Jambi. Jurnal Ilmiah Universitas Batanghari Jambi, 18(2), 368–374.
9. Gunawan, G., & Satria, A. P. (2020). Analisis Praktik Klinik Keperawatan pada Pasien CKD (Cronic Kidney Diseas) dengan Hemodialisa Terhadap Pemberian Terapi Relaksasi Otot Progresif dalam Pencapaian Kestabilan Tekanan Darah di Ruang Hemodialisa RSUD Abdul Wahab Sjahranie Samarinda Tahun 2020. Sekolah Tinggi Ilmu Kesehatan Muhammadiyah Samarinda..J, H., Andri, J., Payana, T. D., Andrianto, M. B., & Sartika, A. (2020). Kualitas Tidur Berhubungan dengan Perubahan Tekanan Darah pada Lansia. Jurnal Kesmas Asclepius, 2(1), 1–11. https://doi.org/10.31539/jka.v2i1.1146
10. Kemenkes RI. (2019). Profil Kesehatan Indonesia. Jakarta: Kemenkes RI.
11. Kemenkes RI. (2020). Hipertensi Menurut WHO, Faktor Risiko, dan Pencegahannya.
12. Kemenkes RI. (2021). Peningkatan Tentang Hipertensi. 1–5.
13. Khayati, Z., Nuraeni, A., & Solechan, A. (2019). Efektifitas Teknik Pernapasan Nostril Dan Slow Deep Breathing Terhadap Penurunan Tekanan Darah Pada Lansia Hipertensi Di Kelurahan Kalirejo Grobogan. In Karya Ilmiah.
14. Khomsah, I. Y., & Wulan, S. S. (2023). Penerapan Relaksasi Nafas Dalam Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi. Jurnal Keperawatan Bunda Delima, 4(1), 88–100.
15. Ladyani, F., Febriyani, A., Prasetia, T., & Berliana, I. (2021). Hubungan antara Olahraga dan Stres dengan Tingkat Hipertensi Pada Lansia. Jurnal Ilmiah Kesehatan Sandi Husada, 10(1), 82–87. https://doi.org/10.35816/jiskh.v10i1.514
16. Mahardika, A. I. (2021). Pengaruh Slow Deep Breathing Terhadap Penurunan Tekanan Darah Pada Penderita Hipertensi. In Surabaya: Sekolah Tinggi Ilmu Kesehatan Hang Tuah.
17. Mangapi, Y. H., & Pabebang, Y. (2022). Pengaruh Relaksasi Nafas Dalam Terhadap Kualitas Tidur Lansia Di Lembang Parinding Kecamatan Sesean Kabupaten Toraja Utara Tahun 2022. Jurnal Ilmiah Kesehatan Promotif, 7(1), 67–79.
18. Mayangsari, U. (2023). Efektivitas Slow Deep Breathing Therapy Terhadap Penurunan Tekanan Darah Pada Penderita Hipertensi Di Wilayah Kerja UPTD Puskesmas Ciawi Gebang.
19. Murhan, A., & Keperawatan Poltekkes Tanjungkarang, J. (2020). Pengaruh Relaksasi Otot Progresif Terhadap Penurunan Tekanan Darah Pada Lansia. Jurnal Ilmiah Keperawatan Sai Betik, 16(2), 165–170.

20. Naufal, A. F., & Khasanah, D. A. (2020). Pengaruh Terapi Relaksasi Otot Progresif terhadap Tekanan Darah pada Wanita Lanjut Usia dengan Hipertensi. Jurnal Kesehatan, 13(2), 136–143.
21. Norma, N., & Supriatna, A. (2019). Pengaruh Teknik Relaksasi Otot Progresif Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi Di Puskesmas Mariat Kabupaten Sorong. Nursing Arts, 12(1), 31–35.
22. Nurman, M. (2019). Efektifitas antara terapi relaksasi otot progresif dan teknik relaksasi nafas dalam terhadap penurunan tekanan darah pada penderita hipertensi di desa pulau Birandang wilayah kerja puskesmas Kampar Timur tahun 2017. Jurnal Ners, 1(2).
23. Parinduri, J. S. (2020). Pengaruh Tekhnik Relaksasi Nafas Dalam Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi Di Wilayah Kerja Puskesmas Sidangkal. Indonesian Trust Health Journal, 3(2), 374–380. https://doi.org/10.37104/ithj.v3i2.63 Rahayu, S. M., Hayati, N. I., & Asih, S. L. (2020). Pengaruh Teknik Relaksasi Otot Progresif terhadap Tekanan Darah Lansia dengan Hipertensi. Media Karya Kesehatan, 3(1), 91–98. https://doi.org/10.24198/mkk.v3i1.2620 5
24. Rahmadhani, M. (2021). Faktor-Faktor Yang Mempengaruhi Terjadinya Hipertensi Pada Masyarakat Di Kampung Bedagai Kota Pinang. Jurnal Kedokteran STM (Sains Dan Teknologi Medik), 4(1), 52–62. https://doi.org/10.30743/stm.v4i1.132
25. Rosdiana, I., & Cahyati, Y. (2019). Effect of progressive muscle relaxation (PMR) on blood pressure among patients with hypertension. International Journal of Advancement in Life Sciences Research, 28–35.
26. Setyoadi, K. (2019). Terapi modalitas keperawatan pada klien psikogeriatrik. Jakarta: Salemba Medika, 145.
27. Suprapto, S., Mulat, T. C., & Lalla, N. S. N. (2021). Relationship between smoking and hereditary with hypertension. Jurnal Kesehatan Masyarakat, 17(1), 37–43.
28. Sutamiyanti N, Suniya Dewi, D. N. (2020). Relaksasi Otot Progresif. In Journal of Business Theory and Practice (Vol. 10, Issue 2, p. 6). http://www.theseus.fi/handle/10024/341553%0Ahttps://jptam.org/indexphp/jptam/article/view/1958%0Ahttp://ejurnal.undana.ac.id/index.php/glory/article/view/4816%0Ahttps://dspace.uii.ac.id/bitstream/handle/123456789/23790/17211077 Tarita Syavira Alicia.pdf?
29. Tandialo, D. I., & Asfar, A. (2022). Pengaruh Terapi Relaksasi Napas Dalam terhadap Penurunan Tekanan Darah Pasien Hipertensi. Window of Nursing Journal, 115–122.
30. Tarigan, B. S., Butar-Butar, R. A., & Siringo- Ringo, T. (2020). Penurunan Tekanan Darah Melalui Slow Deep Breathing pada Lansia yang Mengalami Hipertensi. Jurnal Penelitian Keperawatan Medik, 2(4), 59–63.
31. Waryantini, W., Amelia, R., & Harisman, L. (2021). Pengaruh Relaksasi Otot Progresif Terhadap Tekanan Darah Pada Lansia Dengan Hipertensi. Healthy Journal, 10(1),. 37–44. https://doi.org/10.55222/healthyjournal.v 10i1.514
32. Widiharti, W., & Fitrianur, W. L. (2020). Faktor-faktor yang berhubungan dengan tekanan darah pada masa pandemi covid-19. Journal Of Health Science (Jurnal Ilmu Kesehatan), 5(2), 61–67.

33. Wijaya, E., & Nurhidayati, T. (2020). Penerapan Terapi Relaksasi Otot Progresif Dalam Menurunkan Skala Nyeri Sendi Lansia. Ners Muda, 1(2), 88. https://doi.org/10.26714/nm.v1i2.5643
34. Wulandari, A. N., & Samara, D. (2023). Tekanan Darah Sistolik Lebih Tinggi Pada Sore Daripada Pagi Hari Pada Usia 45-65 Tahun. Jurnal Penelitian Dan Karya Ilmiah Lembaga Penelitian Universitas Trisakti, 8(2), 377–386. https://doi.org/10.25105/pdk.v8i2.16220
35. Yuliandra, A., Alamsyah, M. S., & Mulyadi, E. (2023). Pengaruh teknik relaksasi nafas dalam terhadap penurunan tekanan darah pada pasien dengan hipertensi esensial di Wilayah Kerja Puskesmas Sukabumi. Journal of Public Health Innovation, 4(01), 184–190. https://doi.org/10.34305/jphi.v4i01.886
36. Yunding, J., Megawaty, I., & Aulia, A. (2021). Efektivitas Senam Lansia Terhadap Penurunan Tekanan Darah: Literature Review. Burneo Nursing Journal, 3(1), 23–32. https://akperyarsismd.e-journal.id/BNJ
37. Zakiudin, A. (2023). Asuhan Keperawatan Keluarga Tn. D Pada Ny. W Dengan Sistem Kardiovaskuler : Hipertensi Di Desa Kutayu RT 04 RW 01 Kecamatan Tonjong Kabupaten Brebes.