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## **The Effect of Progressive Muscle Relaxation Technique on Blood Pressure in Hypertension Patients at the Johar Baru District Health Center, Jakarta**

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### **Abstract**

Hypertension is a condition where there is an abnormal increase in blood pressure in a person. The impact of hypertension if left untreated can cause visual impairment, nerve disorders, heart failure, and others. Treatment for hypertension can be done by limiting salt intake, doing various activities such as jogging and also using non-pharmacological techniques, namely progressive muscle relaxation techniques. The aim is to determine the effect of Progressive Muscle Relaxation Techniques on reducing blood pressure in patients with hypertension. The method used is descriptive with a nursing process approach including observation, interviews, physical examinations and the application of progressive muscle relaxation techniques to Mr. Y's foster family, especially Mr. Y with hypertension. The results of this case study showed that the application of progressive muscle relaxation therapy for 5 days with a duration of 10 minutes can lower blood pressure. The conclusion of this case study shows that the application of progressive muscle relaxation therapy has been proven to lower blood pressure in patients with hypertension.

**Keywords:** Hypertension; Elderly; Relaxation Technique; Progressive Muscle.

### **Introduction**

Elderly or senior citizens are people who have reached the age of 60 years and above, according to the World Health Organization (WHO) (1999) elderly are divided into three categories, namely elderly (elderly) between the ages of 60-74 years, old age (old) 75-90 years, and very old age (very old) >90 years, according to (Kholifah, 2016) elderly is a gradual process that results in cumulative changes, namely the process of decreasing function and endurance of the body to respond to stimuli from within the body or from outside the body so that the elderly are more susceptible to attacks of infectious

and non-infectious diseases, non-infectious diseases that appear in Indonesian society include hypertension, stroke, diabetes mellitus (DM), cancer, coronary heart disease, and so on..

Hypertension is one of the diseases that causes the highest death rate worldwide (Suling, 2018), this disease is suffered by many people in Indonesia and is often underestimated by sufferers themselves, hypertension is often referred to as a silent killer because its symptoms only appear at certain times or even cannot be felt at all by sufferers, and is usually only discovered after the sufferer experiences complications from hypertension that they

do not know about, symptoms can include headaches, especially in the nape of the neck, feeling dizzy, a pounding or irregular heartbeat, feeling easily tired, or decreased vision, complications that can arise in people with hypertension include heart failure, stroke, aneurysm, kidney failure, and visual impairment.

Hypertension is often found in the adult to elderly age range, but does not exclude the age range below that can also experience hypertension, hypertension is divided into two, namely primary hypertension which is caused by a person's unhealthy lifestyle such as poor diet, such as consuming foods that contain high fat or high salt, age factors, gender, family history of disease, lack of exercise, and drinking alcoholic beverages, while secondary hypertension can be caused by a certain medical condition such as kidney disease, arteries, heart, or endocrine system.

Hypertension itself is a condition of abnormal increase in blood pressure in the arteries, a person can be said to have hypertension if the systolic blood pressure is at least more than or equal to 140mmHg while the diastolic blood pressure is more than or equal to 90 mmHg (Astuti, 2019), systolic blood pressure indicates the pressure in the arteries when the heart contracts or beats, while diastolic blood pressure indicates the pressure in the arteries when the heart rests between beats,

In general, blood pressure can increase through various factors such as heart activity that pumps harder than normal which causes an increase in the amount of fluid flowing in the arteries every second, loss of elasticity of large arteries so that stiffness occurs in the large arteries which interferes with the process of blood circulation through the arteries which causes the heart to pump blood through

narrow blood vessels and causes an increase in blood pressure. According to data from the World Health Organization (WHO) in 2023, an estimated 1.28 billion people aged 30-79 years worldwide will experience hypertension, most of whom live in low- and middle-income countries, 46% of adults with hypertension are unaware that they have hypertension, less than half of adults (42%) with hypertension are diagnosed and treated, about 1 in 5 adults (21%) with hypertension that is controlled and can be managed.

According to (Risesdas, 2018) states that the prevalence of hypertension based on the results of measuring the population aged 18 years is 34.1%, the highest in South Kalimantan (44.1%), while the lowest in Papua is (22.2%).

The estimated number of hypertension cases in Indonesia is 63,309,620 people, while the death rate in Indonesia due to hypertension is 427,218 deaths. Hypertension occurs in the age group 31-44 years (31.6%), 45-54 years (45.3%), 55-64 years (55.2%). From the prevalence of hypertension of 34.1%, it is known that 8.8% were diagnosed with hypertension and 13.3% of people diagnosed with hypertension did not take medication and 32.3% did not take medication regularly.

According to (Wade, 2023), hypertension treatment can be carried out in the form of pharmacological therapy such as administering antihypertensive drugs, non-pharmacological such as providing counseling to the community regarding the understanding, prevention and treatment of hypertension, while other efforts that can be made to treat hypertension are by carrying out progressive muscle relaxation therapy, progressive muscle relaxation therapy is a therapy that is carried out by carrying out

a series of systematic movements that function to relax the mind and limbs, making the condition from a tense state relaxed again.

According to the research results (Muftikhatul Khasanah et al., 2023) with the title: "The Effect of Progressive Muscle Relaxation Therapy on Reducing Blood Pressure in the Elderly with Hypertension".

By using descriptive analysis and a nursing process approach on a client, by evaluating blood pressure figures 5 minutes before and after progressive muscle relaxation therapy exercises for 3 consecutive days, it was found that there was a decrease in blood pressure figures after therapy for 3 days.

On day 1 before therapy 160/110mmHg, after therapy 160/100 mmHg, on day 2 before therapy 160/90 mmHg, after therapy 145/90mmHg, on day 3 before therapy 140/90 mmHg, after therapy 130/80 mmHg, the average pre-therapy systolic value in clients was 153.3 mmHg and diastolic 96.6 mmHg. Post Therapy obtained an average systolic value of 145 mmHg and a diastolic value of 90 mmHg.

With the results of the study that the provision of progressive muscle relaxation therapy can lower blood pressure in elderly people with hypertension. Another study by (Ika Yuniati & Irma Mustika Sari, 2022) entitled "The Effect of Progressive Muscle Relaxation on Blood Pressure in the Elderly with Hypertension".

Using a pretest-posttest one-group design research design. Which is quantitative with a sample of elderly people with hypertension totaling 18 respondents, the results obtained with a median value in 18 respondents before undergoing therapy

with a systolic number of 160 mmHg and a diastolic number of 90 mmHg, after therapy with a systolic number of 140 mmHg and a diastolic number of 80 mmHg, from the results of the study it can be concluded that there is an effect of blood pressure before and after the provision of progressive muscle relaxation in elderly people with hypertension.

Quoted from research conducted by (Ika Yuniati, Irma 2022) explains that hypertension in the elderly occurs in the aging process related to a person's age. Humans experience changes according to their age. The older they get, the more the functions of the body's organs decrease. Physical changes that occur in the elderly include changes from the cellular level to all organ systems in the body, one of which is increased blood pressure.

Almost everyone experiences an increase in blood pressure as they get older, the possibility of someone suffering from hypertension also increases, systolic pressure continues to increase until the age of 80 years and diastolic pressure continues to increase until the age of 55 then starting at the age of 60 years slowly or even decreases drastically (Waryantini, 2021).

The many complications due to hypertension in the elderly above, the high number of cases of hypertension indicates that hypertension must be followed up immediately. If not treated immediately, hypertension can cause an increased risk of morbidity or premature mortality when systolic and diastolic blood pressure begin to increase.

Prolonged increase in blood pressure can cause damage to blood vessels in certain organs such as the heart, kidneys, brain and eyes. And this indicates that

hypertension must be treated immediately, especially in elderly people with hypertension. Based on this, research or study work is needed that can treat hypertension in the elderly, one way of which is to carry out non-pharmacological therapy with progressive muscle relaxation therapy..

## Method

The author uses a descriptive case study design where the author will describe the application of progressive muscle relaxation therapy to the elderly and families with hypertension to see the effectiveness of therapy in reducing blood pressure in the elderly.

## Results and Discussion

### *Subjective Data*

Mr. Y said he had hypertension since 5 years ago, Mr. Y said he did not know much about the definition, signs, symptoms, causes of hypertension, Mr. Y said feeling dizzy and angry were symptoms of hypertension, Mr. Y said he did not know how to treat hypertension, Mrs. H said both her legs were cramping, Mrs. H said he could not walk without a walking aid

### *Objective Data*

The family was unable to carry out hypertension treatment, Mrs. H appeared to be using a walking aid Data Analysis

## Nursing Intervention

In the first diagnosis, namely ineffective family health management, an intervention was carried out, namely education on the disease process (I.2444) with specific objective 1 (TUK 1), namely the family was able to recognize the problem of hypertension with an action plan, namely identifying readiness and ability to receive information, providing

health education tools and media, explaining the causes and risk factors of the disease, explaining the signs and symptoms caused by the disease, in the second intervention, namely decision-making support (I.09265) with specific objective 2 (TUK 2), namely the family was able to make decisions to overcome hypertension with an action plan, namely identifying perceptions about problems and information that trigger conflict, facilitating clarification of values and expectations that help make choices, discussing the advantages and disadvantages of each solution, providing information requested by the patient, in the third intervention, namely family support for planning nursing care (I.13477) with specific objective (TUK 3), namely the family was able to carry out hypertension treatment with an action plan, namely identifying family needs and expectations about health, identifying actions that can be carried out by the family, motivation to develop attitudes and emotions that support health efforts, recommend ways of care that can be done by the family, in the fourth intervention, namely home maintenance support (I.14501) with a specific objective (TUK 4) namely the family is able to modify the environment to overcome hypertension with an action plan, namely identifying factors that contribute to disruption of home maintenance, supporting family members in setting achievable goals related to home maintenance, teaching strategies to create a safe and clean home environment, in the fifth intervention, namely health effort behavior education (I.12435) with a specific objective (TUK 5) namely the family can utilize health facilities to overcome hypertension with an action plan, namely identifying readiness and ability to receive information, using a health promotion approach by paying attention to the influence and obstacles and the

environment, social and culture, recommending the use of health facilities.

In the second diagnosis, namely the risk of falling, nursing interventions are carried out, namely fall prevention education (I.12407) with a specific objective (TUK 1), namely the family is able to recognize the risk of falling with an action plan, namely identifying cognitive and physical disorders that can cause falls, preparing materials, media about causal factors, how to identify and prevent the risk of falling at home, teaching to modify dangerous areas at home, in the second intervention, namely decision-making support (I.09265) with a specific objective (TUK 2), namely the family is able to make decisions to overcome the risk of falling with an action plan, namely identifying perceptions about problems and information that trigger conflict, facilitating clarifying values and expectations that help make choices, discussing the advantages and disadvantages of each solution, providing information requested by the patient, in the third intervention, namely mobilization support (I.05173) with a specific objective, namely the family is able to carry out care to reduce the risk of falling with an action plan identifying pain or other physical complaints, facilitating movement if necessary, explaining the purpose and procedures for mobilization, in the fourth intervention, namely environmental safety education (I.12384) with a specific objective (TUK 4), namely the family is able to modify the risk environment for falling with a plan actions, namely identifying readiness and ability to receive information, identifying safety hazards in the environment, providing opportunities to ask questions, encouraging the elimination of environmental hazards, teaching high-risk individuals and groups about environmental hazards, in the fifth

intervention, namely health effort behavioral education (I.12435) with a specific objective (TUK 5), namely families are able to utilize health facilities to overcome the risk of falling with an action plan, namely identifying readiness and ability to receive information, using a health promotion approach by paying attention to the influence and obstacles and the environment, social and culture, encouraging the use of health facilities. **Nursing Implementation**

On the first day of the visit to the family, namely May 6, 2023, an assessment was carried out on the family and data analysis was carried out to determine the nursing diagnosis to be addressed, then in the first nursing implementation, namely on May 7, 2023, to address the first diagnosis, namely ineffective family health management, nursing interventions were carried out with TUK 1, nursing actions were carried out, namely identifying the readiness and ability to receive information with the results that the family was ready to receive the information that would be given, providing health education tools and media, explaining the causes and risk factors for the disease with the results that the family could repeat the causes and risk factors for hypertension, explaining the signs and symptoms caused by the disease with the results that the family could repeat the signs and symptoms caused by hypertension, in TUK 2 nursing actions were carried out, namely identifying perceptions about problems and information that trigger conflict with the results that the family said that lack of knowledge about hypertension causes difficulty in making a decision, facilitating clarifying values and expectations that help make choices with the results that the family hopes that after the visit it can help the family to make decisions, provide information requested

by the patient, in TUK 3 nursing actions were carried out, namely identifying the needs and expectations of the family about health with the results that the family hopes that the visit can increase the family's knowledge about hypertension disease and how to do self-care at home, identify actions that can be taken by families with the result that families can do progressive muscle relaxation techniques to lower blood pressure and reduce symptoms that can be caused by hypertension disease, provide motivation to develop attitudes and emotions that support health efforts.

In the second nursing implementation, namely on May 8, 2023, to overcome the second diagnosis, namely the risk of falling, nursing interventions were carried out with TUK, nursing actions were carried out, namely identifying cognitive and physical disorders that could lead to falls with the results that Mrs. H needed a walking aid because her legs were cramping due to her DM, preparing materials, media about causal factors, how to identify and prevent the risk of falling at home with the results that the author did not use media in providing information, the author used the lecture method to convey information related to the risk of falling with the results that the family could repeat the information that had been given regarding the risk of falling, teach to modify dangerous areas at home with the results that the family understood and would maintain the condition of their home to prevent falls, in TUK 2 nursing actions were carried out, namely identifying perceptions about problems and information that triggered conflicts with the results that Mrs. H said that with her legs cramping, she needed an assistive device that caused difficulty in doing her daily work as a housewife, facilitating clarifying values and expectations that helped make choices with the results that

the family hoped that the information provided could prevent falls, providing information requested by the patient, in TUK 3 nursing actions were carried out, namely identifying pain or other physical complaints with the results that Mrs. H said that both of her legs were cramping and could not be used to walk, explain the purpose and procedure of mobilization with diabetes mellitus foot exercise therapy movements with the result that Mrs. H said that the cramps in both legs had decreased.

In the third nursing implementation, namely on May 9, 2023, to overcome the first diagnosis, namely ineffective family health management, nursing intervention was carried out with TUK 4, nursing actions were carried out, namely identifying factors that contribute to disruption of home maintenance with the result that the family does not have factors that cause disruption in home maintenance, supporting family members in setting achievable goals related to home maintenance, teaching strategies for creating a safe and clean home environment, in TUK 5 nursing actions were carried out, namely identifying readiness and ability to receive information with the result that the family is ready to receive the information that will be given, using a health promotion approach by paying attention to the influences and obstacles and the environment, social and culture, recommending the use of health facilities with the result that the family said they would carry out routine checks at the nearest health center.

In the fourth nursing implementation, namely on May 10, 2023, to address the second diagnosis, namely the risk of falling, nursing interventions were carried out with TUK 4, nursing actions were carried out, namely identifying the

readiness and ability to receive information with the results that the family was ready to receive the information to be given, identifying safety hazards in the environment with the results that the floor was dry and clean, providing opportunities to ask questions, recommending eliminating environmental hazards, in TUK 5 nursing actions were carried out, namely identifying the readiness and ability to receive information with the results that the family was ready to receive the information to be given, using a health promotion approach by paying attention to the influences and obstacles and the environment, social and culture, recommending the use of health facilities with the results that the family will carry out routine checks at the nearest health center.

### Nursing Evaluation

After visiting the family for 5 days, it was found that both nursing diagnoses, namely ineffective family health management and risk of falling, could be resolved and in TUK 1, 2, 3, 4, 5 were achieved.

### Conclusion

After visiting Mr. Y's family, especially Mr. Y with hypertension problems on

6. Hasanuddin, F., & Nasriani, N. (2021). Penerapan Senam Kaki Pada Pasien Diabetes Melitus. *Alauddin Scientific Journal of Nursing*, 2(1), 32-40.
7. Kesuma, N. S. I., Putri, M. K. N. I. M., Meliyani, M. K. N. R., Saputra, M. K. N. A. U., Elviani, M. K. Y., & Keb, A. M. (2023). Keperawatan Keluarga. Penerbit Adab. Khasanah, M., Murfisari, R., Darmawan, W. D., & Kurniawan, W. E. (2024). Pengaruh Terapi Relaksasi Otot Progresif terhadap Penurunan Tekanan Darah pada Lansia dengan

Jalan KI Hideng, Periuk Village, RT 2 RW 3, Tangerang for 5 consecutive days, nursing care was carried out by providing progressive muscle relaxation therapy, it was found that there was an effect on the patient's blood pressure, namely a decrease in blood pressure in Mr. Y after progressive muscle relaxation therapy was carried out.

### References

1. Adam, L. (2019). Determinan hipertensi pada lanjut usia. *Jambura Health and Sport Journal*, 1(2), 82-89.
2. Astuti, S. D., & Krishna, L. F. P. (2019). Asuhan Keperawatan Keluarga Dengan Hipertensi. *Akademi Keperawatan Pasar Rebo, Departemen Keperawatan Komunitas*, 3(1), 62-81.
3. Basith, Z. A., & Prameswari, G. N. (2020). Pemanfaatan Pelayanan Kesehatan di Puskesmas. *HIGEIA (Journal of Public Health Research and Development)*, 4(1), 52-63.
4. Efendi, H., & Larasati, T. (2017). Dukungan keluarga dalam manajemen penyakit hipertensi. *Jurnal Majority*, 6(1), 34-40.
5. Harnilawati, S. K. (2013). Konsep dan proses keperawatan keluarga. *Pustaka As Salam. Hipertensi. Jurnal Penelitian Perawat Profesional*, 6(5), 2053-2058.
8. Kholifah, S. N. (2016). Keperawatan gerontik. Kholifah, S. N., & Widagdo, W. (2016). Keperawatan keluarga dan komunitas.
9. Kusuma, W., Tiranda, Y., & Sukron, S. (2021). Terapi Komplementer yang Berpengaruh Terhadap Penurunan Tekanan Darah Pasien Hipertensi di Indonesia: Literature Review. *JKM: Jurnal Keperawatan Merdeka*, 1(2), 262-282.
10. Kuswardhani, T. (2006). Penatalaksanaan hipertensi pada

lanjut usia. *Jurnal Penyakit Dalam*, 7(2), 135-140.

11. Lisiswanti, R., & Aulia Dananda, D. N. (2016). Upaya pencegahan hipertensi. *Majority*, 5(3), 50-54.
12. Murhan, A., Purbianto, P., & Sulastri, S. (2022). Pengaruh Relaksasi Otot Progresif Terhadap Penurunan Tekanan Darah Pada Lansia. *Jurnal Ilmiah Keperawatan Sai Betik*, 16(2), 165-170.
13. Nurhasanah, A., & Nurdahlia, N. (2020). Edukasi Kesehatan Meningkatkan Pengetahuan Dan Keterampilan Keluarga Dalam Pencegahan Jatuh Pada Lansia. *Jkep*, 5(1), 84-100.
14. Nurhayati, L., & Fibriana, N. (2019). Dukungan keluarga terhadap kepatuhan kontrol pengobatan pasien
20. Pelaksanaan Edukasi Kesehatan Tentang Penyakit Hipertensi. *Abdimas Polsaka: Jurnal Pengabdian Masyarakat*, 2(1), 13-19.
21. 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).
22. Renteng, S., & Simak, V. F. (2021). Keperawatan Keluarga. Tohar Media.
23. Saiful Nurhidayat, S. N. 2015. Asuhan Keperawatan Pada Pasien Hipertensi. UNMUH Ponorogo Press.
24. Salamung, N., Pertiwi, M. R., Ifansyah, M. N., Riskika, S., Maurida, N., Suhariyati, & Rumbo, H. (2021). Keperawatan Keluarga= Family Nursing.
25. Satyani, D. J. (2023). Hubungan Dukungan Keluarga Dalam Memodifikasi Lingkungan Dengan Resiko Jatuh Pada Lansia Di Desa Tangkil Tahun 2003. (Doctoral dissertation, STIKES Bethesa Yakkum Yogyakarta).
26. Utami, A. P., & Hudiyawati, D. hipertensi. *Jurnal Keperawatan Karya Bhakti*, 5(2), 63-69.
15. PPNI (2016). Standar Diagnosis Keperawatan Indonesia: Definisi dan Indikator Diagnostik, Edisi 1. Jakarta: DPP PPNI.
16. PPNI (2018). Standar Intervensi Keperawatan Indonesia: Definisi dan Tindakan Keperawatan, Edisi 1. Jakarta: DPP PPNI.
17. PPNI (2018). Standar Luaran Keperawatan Indonesia: Definisi dan Kriteria Hasil Keperawatan, Edisi 1. Jakarta: DPP PPNI.
18. PPNI, T. (2021). Pedoman Standar Prosedur Operasional Keperawatan. Jakarta: DPP PPNI.
19. Qamarya, N., Purwoto, A., Aji, S. P., Hartaty, H., & Menga, M. K. (2023). (2020, December). Gambaran dukungan keluarga terhadap Self-Management penderita hipertensi. In Prosiding University Research Colloquium (pp. 9-15).
27. Utami, N., & Suratini, S. (2017). Hubungan Dukungan Keluarga Dengan Risiko Jatuh Pada Lansia Di Desa Krasakan Lumbungrejo Tempel Sleman Yogyakarta (Doctoral dissertation, Universitas' Aisyiyah Yogyakarta).
28. Waryantini, W., Amelia, R., & Harisman, L. (2021). Pengaruh relaksasi otot progresif terhadap tekanan darah pada lansia dengan hipertensi. *Healthy Journal*, 10(1), 37-44.
29. Yuniati, I., & Sari, I. M. (2022). Pengaruh Relaksasi Otot Progresif Terhadap Tekanan Darah Pada Lansia Dengan Hipertensi. *OVUM: Journal of Midwifery and Health Sciences*, 2(2), 72-78