APPLICATION OF FINGER GRIP RELAXATION THERAPY TO REDUCE BLOOD PRESSURE IN ELDERLY HYPERTENSIVE PATIENTS WITH RISK OF INEFFECTIVE CEREBRAL PERFUSION

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Abstract

Hypertension is one of the major health problems in the elderly that can cause cerebral perfusion disorders. Hypertension management can be done through pharmacological and non-pharmacological therapies. One effective non-pharmacological therapy is finger grip relaxation, a simple technique that stimulates the body's meridian points to improve blood circulation and reduce sympathetic nerve tension. The purpose of this activity was to apply finger grip relaxation therapy to elderly people with hypertension who were at risk of ineffective cerebral perfusion. The method used was a case study of two elderly respondents with hypertension in RW 03, Pagaruyung Village, Tapung District, who were given finger grip relaxation intervention for three consecutive days, twice a day. The results showed a decrease in systolic and diastolic blood pressure after the application of therapy and an increase in relaxation in the elderly. In conclusion, finger grip relaxation therapy can be an effective and easy-to-apply non-pharmacological method to help control blood pressure in elderly hypertensive patients.
Keywords: Hypertension; Elderly; Finger Grip Relaxation; Cerebral Perfusion; Nursing Care.

INTRODUCTION

Hypertension or high blood pressure is a condition characterized by an increase in systolic blood pressure above 140 mmHg and diastolic blood pressure above 90 mmHg. The occurrence of hypertension indicates that this disease must be managed promptly, as it may lead to various complications if left untreated over a long period. Management of hypertension can be carried out using pharmacological and non-pharmacological approaches. Pharmacological management is performed through the administration of drug therapy aimed at reducing blood pressure. Non-pharmacological management refers to therapeutic techniques that do not involve the use of medication in the treatment process (Waryantini, Amelia, & Harisman, 2021). One non-pharmacological technique that can reduce blood pressure is the finger hold relaxation technique.

The finger hold relaxation technique is a very simple relaxation method that can be easily performed by anyone. This technique is associated with the fingers of the hand and the flow of energy within the body. Holding the fingers while taking deep breaths (relaxation) can reduce and relieve physical and emotional tension. This technique can warm the entry and exit points of energy along the meridians (energy pathways in the body) located in the fingers, thereby providing reflexive (spontaneous) stimulation during the grip. The stimulation received will then transmit waves to the brain, which are subsequently continued to the nerves of organs experiencing disturbances, allowing blockages in the energy pathways to become smooth and balanced (Firdaus, Hoedaya, & Inriyana, 2024).

Through this mechanism, the finger hold relaxation technique is believed to reduce sympathetic nervous system activity and enhance parasympathetic activity, leading to a decrease in blood pressure and heart rate, as well as providing a sense of calm and comfort for patients with hypertension. In addition, this technique can help reduce stress, anxiety, and muscle tension, which are common triggering factors for increased blood pressure. The advantages of the finger hold relaxation technique include its simplicity, safety, lack of need for special equipment, and the ability to be performed independently by patients anytime and anywhere. Therefore, this technique is highly suitable to be applied as a non-pharmacological nursing intervention in efforts to control blood pressure in patients with hypertension. The implementation of the finger hold relaxation technique is expected to serve as an effective complementary therapy alongside pharmacological treatment, thereby helping to prevent hypertension-related complications and improve patients' quality of life.

RESEARCH METHOD

The method used was a case study with an Evidence-Based Nursing Practice (EBN) approach. The research subjects consisted of two elderly people with hypertension in RW 03, Pagaruyung Village. The intervention given was finger grip relaxation therapy for three consecutive days, performed twice a day in the morning and afternoon. The procedure involved educating the subjects about the benefits of the therapy, demonstrating the finger grip relaxation technique, and measuring blood pressure before and after the therapy using a digital sphygmomanometer. Data were collected through observation, interviews, and recording of blood pressure measurements.

RESEARCH RESULTS

The results of the intervention showed a significant decrease in blood pressure in the elderly, as presented in the following table.

Table 1 Notes on Actions and Progress Mr. S

Nursing Diagnosis	Date/time and hour	Implementation	Evaluation
Risk of Ineffective Cerebral Perfusion	Thursday, October 16, 2025 08:10 08:35 08:55	1. Assess the client's complaints related to hypertension symptoms (dizziness, blurred vision, muscle tension). 2. Measuring vital signs (blood pressure, pulse, respiratory rate, temperature). 3. Providing education on the importance of taking antihypertensive medication regularly to prevent cerebral complications.	S: The client says they often feel dizzy and sometimes have blurred vision, especially when getting up from sitting or sleeping. O: BP: 160/95 mmHg, Pulse: 88 beats per minute, the client appears anxious and tense in the neck muscles A

	4:00 4:10 4:30 4:35	4. Explaining the effects of hypertension on the brain (risk of stroke, cognitive decline). 5. Teaching finger-grip relaxation techniques. 6. Recording responses and blood pressure after relaxation exercises. 7. Measuring vital signs 8. Conducting finger grip relaxation therapy 9. Recording responses and blood pressure after relaxation exercises	Risk of ineffective cerebral perfusion related to high blood pressure P: 1. Provide education on the importance of regular hypertension treatment to prevent complications in the brain (stroke). 2. Teach finger grip relaxation techniques 3. Recording changes in blood pressure and feelings of relaxation after exercise.
	Friday October 17, 2025 08:00 08:10 08:30 8:35 8:55 4:10 4:30 16:35	1. Monitor vital signs, especially blood pressure and pulse. 2. Evaluate the client's compliance with taking antihypertensive medication. 3. Provide further education on factors that trigger hypertension: stress, excessive salt intake, lack of sleep, and smoking. 4. Providing positive reinforcement for the client's success in following the treatment program. 5. Assisting clients in performing 20-minute finger grip relaxation exercises. 6. Recording responses and blood pressure	S: The client says they feel calmer after the finger grip exercise and is not as dizzy as yesterday. O: BP: 158/88 mmHg, Pulse: 84 beats per minute, the client appears more relaxed and able to perform the exercises independently. A: The risk of cerebral perfusion remains, but there has been a decrease in blood pressure and an improvement in compliance and emotional control. P:

		after relaxation exercises. 7. Measuring vital signs. 8. Conducting finger grip relaxation therapy. 9. Recording responses and blood pressure after the relaxation exercise.	1. Provide reinforcement and praise for medication adherence and relaxation exercises. 2. Repeating education about hypertension triggers (salt, stress, lack of sleep). 3. Monitoring signs of cerebral perfusion such as consciousness, speech, and muscle strength.
	Saturday October 18, 2025 08:00 08:05 08:10 08:15 08:35 4:00 4:05 4:25 4:30	1. Measuring vital signs and evaluating changes in blood pressure. 2. Review medication adherence and relaxation exercises. 3. Provide ongoing education to family members ( ) about the importance of monitoring blood pressure at home and supporting the elderly. 4. Performing finger-grip relaxation therapy. 5. Recording results and responses after finger grip relaxation therapy. 6. Measuring vital signs 7. Conducting finger grip relaxation therapy. 8. Recording responses and blood pressure after relaxation exercises	S: The client reports having become accustomed to performing finger grip relaxation exercises every morning and evening, feeling lighter in the head. O: BP: 150/85 mmHg, Pulse: 80 beats per minute, client appears calm and able to explain how to perform the finger-gripping exercise again. A: The risk of cerebral perfusion has decreased, blood pressure is more controlled, and the

		9. Encourage clients to continue finger grip relaxation exercises regularly	client is actively participating in the treatment program. P: Monitor blood pressure and record results for evaluation. 1. Provide reinforcement to help the client maintain medication adherence and relaxation exercises. 2. Provide ongoing education to the family about the importance of support and monitoring blood pressure at home.

Table 2 Notes on Actions and Progress of Mr. S

Nursing Diagnosis	Date and time	Implementation	Evaluation
Risk of Ineffective Cerebral Perfusion	Thursday, October 16, 2025 09:10 09:35 09:55 5:00 5:10 PM 5:30	1. Assessing client complaints related to hypertension symptoms (dizziness, blurred vision, muscle tension). 2. Measure vital signs (blood pressure, pulse, respiratory rate, temperature). 3. Providing education on the importance of taking antihypertensive medication regularly to prevent cerebral complications. 4. Explaining the effects of hypertension on the brain (risk of stroke, cognitive decline).	S: The client says they often feel dizzy O: BP: 178/95 mmHg, Pulse: 88 beats per minute, the client appears anxious and tense in the neck muscles A Risk of ineffective cerebral perfusion related to high blood pressure P: 4. Provide education on the importance of regular hypertension treatment to

	5:35	5. Teaching finger-grip relaxation techniques ( ). 6. Recording responses and blood pressure after relaxation exercises. 7. Measuring vital signs 8. Conducting therapy 9. Finger relaxation 10. Recording responses and blood pressure after relaxation exercises	prevent complications in the brain (stroke). 5. Teach finger grip relaxation techniques 6. Recording changes in blood pressure and feelings of relaxation after exercise.
	Friday October 17, 2025 09:00 09:10 09:30 9:35 9:55 5:10 PM 5:30 5:35	1. Monitor vital signs, especially blood pressure and pulse. 2. Evaluate the client's compliance with taking antihypertensive medication. 3. Provide further education on the factors that trigger hypertension: stress, excessive salt intake, lack of sleep, and smoking. 4. Provide positive reinforcement for the client's success in following the treatment program. 5. Assisting the client in performing finger relaxation exercises for 20 minutes. 6. Recording responses and blood pressure after relaxation exercises. 7. Measuring vital signs. 8. Conducting finger grip relaxation therapy. 9. Recording responses and blood pressure after the relaxation exercise.	S: The client reported feeling calmer after the finger-grip relaxation exercise and not as dizzy as yesterday. O: BP: 162/85 mmHg, Pulse: 84 beats per minute, the client appears more relaxed and is able to perform the exercise independently. A: The risk of cerebral perfusion remains, but there has been a decrease in blood pressure and an improvement in compliance and emotional control. P: 1. Provide reinforcement and praise for medication adherence and relaxation exercises.

			2. Repeating education about hypertension triggers (salt, stress, lack of sleep). 3. Observe signs of of cerebral perfusion such as consciousness, speech, and muscle strength.
	Saturday October 18, 2025 09:00 09:05 09:10 09:15 09:35 5:00 PM 5:05 5:25 PM 5:30	1. Measuring vital signs and evaluating changes in blood pressure. 2. Review medication adherence and relaxation exercises. 3. Provide ongoing education to the family about the importance of monitoring blood pressure at home and supporting the elderly. 4. Performing finger-grip relaxation therapy 5. Recording results and responses after finger grip relaxation therapy. 6. Measuring vital signs 7. Conducting finger grip relaxation therapy. 8. Recording responses and blood pressure after relaxation exercises 9. Encourage clients to continue finger grip relaxation exercises regularly	S: The client says they are already accustomed to performing finger grip relaxation every morning and evening O: BP: 157/89 mmHg, Pulse: 80 beats per minute, the client appears calm and is able to explain how to perform the finger-gripping exercise. A: The risk of cerebral perfusion has decreased, blood pressure is more controlled, and the client is actively participating in the treatment program. P: Monitor blood pressure and record results for evaluation. 1. Provide reinforcement to help the client

		maintain medication adherence and relaxation exercises. 2. Provide ongoing education to the family about the importance of support and monitoring blood pressure at home.

The table above shows the implementation and evaluation carried out on Mr. S and Mrs. S over three consecutive days

Table 2 shows the results of blood pressure measurements in Mr. S after finger grip relaxation therapy

Day/Date	Pre	Post
Thursday/October 16, 2025	163/98 mmHg	160/95 mmHg
Friday, October 17, 2025	162/88 mmHg	158/85 mmHg
Saturday/October 18, 2025	155/89 mmHg	150/85 mmHg

Table 4: Blood pressure measurement results for Mrs. S after finger-grip relaxation therapy

Day/Date	Pre	Post
Thursday/October 16, 2025	183/98 mmHg	178/95 mmHg
Friday, October 17, 2025	169/88 mmHg	162/85 mmHg
Saturday/October 18, 2025	162/89 mmHg	157/89 mmHg

The table above shows that there was a decrease in blood pressure in both respondents. The results of the implementation showed a decrease in blood pressure in both respondents after three days of finger grip relaxation therapy. In the first respondent (Mr. S), blood pressure decreased from 169/102 mmHg to 150/85 mmHg. Meanwhile, in the second respondent (Mrs. S), blood pressure decreased from 178/89 mmHg to 157/89 mmHg. Both respondents also reported feeling calmer, lighter in the head, and sleeping better after therapy. In addition, respondents showed increased compliance with the antihypertensive treatment program and were able to perform finger grip relaxation exercises independently.

DISCUSSION

After conducting an assessment and establishing a nursing diagnosis, nursing interventions were carried out and the selected nursing action plan based on *Evidence-Based Practice* was explained, namely the application of finger grip relaxation in elderly hypertensive patients with the nursing problem of ineffective cerebral perfusion risk. In this application, two elderly individuals received the finger grip relaxation therapy intervention. The intervention and implementation process was carried out over 3 days with one meeting per day and a duration of 20 minutes. The application was conducted in the morning and afternoon. This intervention was carried out from October 16 to 19, 2025. Before applying finger grip relaxation, the elderly's blood pressure was measured using a sphygmomanometer.

The results showed that finger grip relaxation therapy was effective in helping to lower blood pressure and increase relaxation in elderly hypertensive patients. This decrease in blood pressure is in line with the study by Firdaus et al. (2024), which reported that finger grip relaxation can lower systolic blood pressure by 10 mmHg and diastolic blood pressure by 5 mmHg in pre-hypertensive elderly individuals. This technique works by stimulating finger meridian points associated with specific nervous systems and organs, thereby reducing sympathetic nervous system activity and improving blood circulation. Additionally, providing education about antihypertensive treatment enhances patient compliance in following combined pharmacological and non-pharmacological therapy.

CONCLUSION

Finger grip relaxation therapy has been proven effective in lowering blood pressure and improving relaxation in hypertensive elderly individuals at risk of ineffective cerebral perfusion. This intervention can be implemented as part of non-pharmacological nursing care to help control blood pressure and prevent cerebral complications.

REFERENCE

1. Anggraini, F. (2021). Risk of Ineffective Cerebral Perfusion in Hypertensive Patients. Journal of Medical Surgical Nursing, 9(2), 45-52.
2. Ministry of Health of the Republic of Indonesia. (2023). Indonesian Health Survey 2023. Jakarta: Ministry of Health of the Republic of Indonesia.
3. World Health Organization. (2023). Hypertension: Key Facts. Geneva: WHO Press.
4. A. Setianingsih and A. Nuradhiani, “Penyuluhan Hipertensi Pada Pra-Lansia di Wilayah Kerja Puskesmas Taktakan Kota Serang,” Jurnal Pengabdian dan Pengembangan Masyarakat Indonesia, vol. 3, no. 1, pp. 44–48, 2024, doi: 10.56303/jppmi.v3i1.231.
5. T. Agustini and F. Jama, “Penerapan Terapi Relaksasi Genggam Jari Untuk Menurunkan Tekanan Darah Pada Pasien Hipertensi di Wilayah Kerja Puskesmas Karuwisi Kota Makassar,” Paradigma, vol. 31, pp. 405–414, 2025, doi: 10.33503/paradigma.v31i2.2359.
6. W. E. Astuti, A. S. Siwi, and I. H. Susanti, “Edukasi Teknik Relaksasi Genggam Jari Terhadap Penurunan Tekanan Darah Lansia Hipertensi di Desa Kedungbanteng Purwokerto,” Mitra Mahajana: Jurnal Pengabdian Masyarakat, vol. 5, no. 3, pp. 303–310, 2024, doi: 10.37478/mahajana.v5i3.4541.
7. S. P. Collins et al., “No Title,” vol. 7, no. 2, pp. 167–186, 2021.
   F. R. Fauzia and T. Susilowati, “Penerapan Relaksasi Genggam Jari Terhadap Penurunan Tekanan Darah Pada Lansia Penderita Hipertensi di Desa Petoran RT 02 RW 04 Jebres Surakarta,” IJOH: Indonesian Journal of Public Health, vol. 2, no. 4, pp. 492–503, 2024.

8. T. N. Firdaus, A. P. Hoedaya, and R. Inriyana, "Efektivitas Pemberian Terapi Relaksasi Genggam Jari Terhadap Tekanan Darah Pada Pra-Lansia Penderita Hipertensi," Jurnal Keperawatan Florence Nightingale, vol. 7, no. 1, pp. 285–291, 2024, doi: 10.52774/jkfn.v7i1.193.
9. G. Nur Fadhilah and M. Maryatun, "Penerapan Terapi Genggam Jari dan Nafas Dalam untuk Menurunkan Tekanan Darah pada Lansia Penderita Hipertensi," ASJN (Aisyiyah Surakarta Journal of Nursing), vol. 3, no. 2, pp. 89–95, 2022, doi: 10.30787/asjn.v3i2.1052.
10. B. A. Nuraini and G. Priambodo, "Penerapan Terapi Progressive Muscle Relaxation (PMR) terhadap Kontrol Marah pada Pasien Risiko Perilaku Kekerasan di Ruang Gatot Kaca RSJD Dr. Zainudin Surakarta," vol. 23, pp. 1–10, 2023.
11. E. Oktaviani, T. N. Prastia, and E. Dwimawati, "Penyebab Hipertensi pada Lansia dan Cara Mencegahnya," Promotor, vol. 5, no. 2, p. 147, 2022. [Online]. Available: https://ejournal.uika-bogor.ac.id/index.php/PROMOTOR/article/view/6148/3327
12. L. D. Sari, R. Elliya, and D. D. Djamaludin, "Penerapan Terapi Relaksasi Genggam Jari dan Nafas Dalam terhadap Penurunan Tekanan Darah pada Pasien Hipertensi pada Keluarga," Journal of Qualitative Health Research & Case Studies Reports, vol. 3, no. 1, pp. 15–22, 2023, doi: 10.56922/quilt.v3i1.341.
13. R. Nuraeni and A. Wianti, Asuhan Keperawatan Gangguan Maternitas. LovRinz Publishing, 2021.
14. V. Sovianti et al., "Progressive Muscle Relaxation Therapy in Patients at Risk of Violent Behavior: A Case Study," Jurnal Keperawatan Jiwa, vol. 12, no. 2, p. 429, 2024, doi: 10.26714/jkj.12.2.2024.429-436.
15. W. Waryantini, R. Amelia, and L. Harisman, "Pengaruh Relaksasi Otot Progresif Terhadap Tekanan Darah Pada Lansia Dengan Hipertensi," Healthy Journal, vol. 10, no. 1, pp. 37–44, 2021, doi: 10.55222/healthyjournal.v10i1.514.