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Lowering Blood Pressure of Hypertension through Benson Relaxation

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Abstract

Hypertension is a chronic non-communicable disease, the cases of which are increasing every years. Hypertension is caused by heredity, age, food and unhealthy lifestyle. The consequences of hypertension include heart disease, stroke, myocardial infarction, atherosclerosis, kidney failure and other diseases. One of the effective and easy non-pharmacological treatments for lowering blood pressure is using Benson relaxation. Benson's relaxation is a concentration of relaxation by harmonizing blood pressure so that it reduces the work of the sympathetic and initial sympathetic nerves to affect heart rate, pulse, respiration and activities that use the workload of the heart. This study aimed to analyze the effect of benson relaxation in reducing blood pressure in hypertensive patients. This study was a pre-experimental research with a pretest and posttest design approach. The population in this study was hypertensive patients with a sample of 18 respondents selected by purposive sampling with the criteria of being willing to become respondents and participating in Benson relaxation activities for 2 weeks. The hypothesis testing used the T test (Paired sample Test). The results of the pre post systole study obtained p = 0.000 and pre post diastole p = 0.007 indicating that Benson relaxation is done regularly and is effective in reducing blood pressure in people with hypertension. It is hoped that people and families with hypertension can apply Benson in reducing and controlling blood pressure.

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INTRODUCTION

Cases of hypertension are increasing every year. (World Health organization, 2022) for 2021 estimates that there are 1.28 billion adults aged 30-79 years worldwide suffering from hypertension, two out of them suffer from hypertension in low- and middle-income countries. As many as 46% of adults know they suffer from hypertension. (Kementerian Kesehatan Republik Indonesia, 2018) in 2013 stated that hypertension cases in Indonesia reached 31.7%. Mentioned that the highest prevalence of hypertension in Indonesia was in the South Kalimantan area of 44.1%, more women suffer from hypertension in Indonesia with a percentage of 36.9% compared to men. Cases of hypertension are highest in rural areas compared to urban areas and the average hypertension occurs in patients who have not or have not attended school with a percentage of 51.6%. (Riskesdas, 2013) The prevalence of hypertension cases in Aceh is 30.9% nationally.

The prevalence of high blood pressure in women is higher than in men. the prevalence of women is 32.9% while men are only 28.7%. Likewise, the prevalence in urban areas is slightly higher, 31.7% compared to 30.2% in rural areas. Prevalence will increase with increasing age. The high cases of hypertension have an impact on the high mortality rate in the world (Christensen, 2023). Hypertension is caused by both controllable and uncontrollable factors. Factors that can be controlled include obesity, smoking habits, consuming excess alcohol and caffeine, consuming excess salt, stress and hormonal balance while factors that cannot be controlled consist of age, sex and heredity (Yanita, 2022). The problem that often arises in people with hypertension is stroke, which is caused by high blood pressure circulating in the brain or due to an embolus that is detached from a brain vessel. In addition, myocardial infarction can also occur if the coronary arteries experience atherosclerosis so that they cannot supply enough oxygen to the myocardium. A thrombus is formed thereby blocking the flow of blood through the vessel. Hypertension causes kidney failure due to progressive damage to glomerular capillaries due to high blood pressure (Ardiansyah, 2012).

The higher a person's blood pressure, the higher the risk of heart disease, kidney failure and stroke. Symptoms felt by patients include difficulty carrying out daily activities, neck stiffness, neck and back feeling heavy so that it can affect balance and make it difficult to carry out activities (Ministry of Health, 2019). Management of hypertension can be done pharmacologically and non-pharmacologically (Yulanda & Lisiswanti, 2017). Pharmacological treatment is given to hypertensive patients who are already showing symptoms. Hypertensive patients who require lifelong medication are a consideration for doctors to pay attention to the working effects of drugs and the consequences that arise in the future (Kandarini, 2017). Pharmacological treatment has side effects for the category of diuretics, alpha blockers, calcium channel blockers, ACE inhibitors and angiotensin receptor blockers. besides that treatment for people with hypertension in a long time will experience boredom in taking drugs (Glenys & Riska, 2017). Treatment of hypertension using drugs requires a long time, this causes the patient to feel hopeless, so that the treatment of hypertension becomes incomplete (Hastuti et al., 2017)

The results of a literature review that has been carried out by (Ainurrafiq et al., 2019) show that non-pharmacological treatment can reduce or control blood pressure and can be used as an alternative treatment and is an efficient intervention. Several types of non-pharmacological therapy in lowering or controlling blood pressure include medication on the mind and body, meditation biofeedback, hypnosis, home care, aromatherapy, relaxation, acupressure from Chinese herbal medicine, juice therapy, herbal therapy, massage, yoga, breathing and relaxation (Jain & Ritu, 2011). Benson relaxation therapy is a relaxation technique for focusing attention (Solehati & Rustina, 2015). Benson relaxation affects heart rate, pulse, respiration and activities that use the workload of the heart (Teimouri et al., 2019). Benson Relaxation regulatory center in the hypothalamus. Regulation of blood pressure through the alignment of blood pressure, reducing the work of the sympathetic and parasympathetic nerves (Benson & MZ., 1975). The Benson relaxation technique begins with a deep breathing relaxation technique. Benson relaxation uses four elements including supplication, positioning the patient with hypertension comfortably and safely, saying soothing words repeatedly and focusing on the words spoken (Ibrahim et al., 2019).

Benson relaxation has the benefit of improving sleep quality in pediatric patients with acute lymphoblastic leukemia (Zupanec et al., 2017), improving stress levels in nurses (Sajadi et al., 2017), reducing anxiety levels in the elderly (D

Novitasari & Aryana , 2013) and lower blood pressure in patients with hypertension (Wartonah et al., 2022). The results of research conducted by (Yulendasari & Djamaludin, 2021) found that benson relaxation was effective in reducing blood pressure in hypertensive patients with a difference in systolic blood pressure between the intervention group and the control group of 8.063 (p-value 0.000). The same research showing that Benson relaxation has an effect on blood pressure in hypertensive patients with an average (Mean) of 84.07(Atmojo et al., 2019). The results of the analysis test obtained a value of p = 0.000. The results of a survey that researchers found in Blang Krueng village showed that hypertension sufferers did not know benzon relaxation in lowering blood pressure. Based on the phenomenon above, researchers are interested in conducting research on the relationship of Benson relaxation in lowering blood pressure in hypertension patients in Blang Krueng Village.

METHODS

This study was a Pre Experimental study with a one-group pretest and post-test design approach. The respondents involved in this study were 18 respondents who experienced hypertension. The sampling technique used non-probability sampling with purposive sampling technique. This research was carried out from 30 October to 6 November 2022 in Blang Krueng Village, Baitussalam District, Aceh Besar District. The data analysis used by the researcher was univariate and bivariate. Univariate analysis was used to look at the characteristics of respondents. Bivariate analysis using paired t test to see the effect of benson's relaxation in reduce blood pressure in hypertension patients. This study obtained an ethical permit from UPPM Akper Kesdam Iskandar Muda Banda Aceh with the number 55/UPPM/VI/2022.

RESULTS

Table 1: Characteristics of the subjects

Distribution of responden by gender in patient with Hypertension in Blang Krueng Village				
No	**Gender**		**Respondent**	**Percentage (%)**
1	a.	Male	5	27,8
2	b.	Female	13	72,8
Distribution of responden by age in patient with Hypertension in Blang Krueng Village				
1	a.	26-35	2	11,1
2	b.	36 - 45	5	27,8
3	c.	> 46	11	61,1
Distribution of responden by Education in patient with Hypertension in Blang Krueng Village				
1	a.	Primary school	2	11,1
2	b.	Junior high school	5	27,8
3	c.	Senior High School	7	38,9
4	d.	College	4	22,2

Source : Primary Data

Based on table 1, it shows that the most dominant respondents were women with a percentage of 72.8%, the most age was > 46 years with a total of 11 respondents and the most senior high school education was 38.9%.

Table 2: Table of distribution of systolic and diastolic blood pressure (n=18)

No	**Blood pressure before benson relaxation**						**Blood pressure after benson relaxation**					
	Sistole	**F**	**%**	**Diastole**	**F**	**%**	**Sistole**	**F**	**%**	**Diastole**	**F**	**%**
1	≤ 120	0	0	≤ 80	0	0	≤ 120	1	5,5	≤ 80	1	5,5
2	121-139	4	22,2	81- 89	11	61,1	121-139	11	61,1	81- 89	12	66,7
3	140-159	11	61,1	90-99	4	22,2	140-159	5	27,9	90-99	5	27,8
4	≥ 160	3	16,7	≥ 100	3	16,7	≥ 160	1	5,5	≥ 100	0	0

Based on table 2, it shows that the majority of respondents' systolic blood pressure is at most between 140-159, 11 respondents with a percentage of 61.1%, after relaxation of Benson the systolic blood pressure is mostly between 121-139.11 respondents or as much as 61.1%. Meanwhile, the diastolic blood pressure before and after Benson relaxation was at most between 81-89, 61.1% before Benson relaxation and 66.7% after giving Benson relaxation.

Table 3: benson relaxation effectiveness in lowering blood pressure of hypertention

No	Mean	N	Std.Deviation	T	Sig (2-tailed)
Pre-post Sistole	11,111	18	9,47994	4,973	,000
Pre–post diastole	8,05556	18	8,05556	3,070	,007

Based on table 3 it can be seen that the results of statistical tests carried out using the Paired t-Test for systolic blood pressure showed that the results were p = 0.000 and for diastolic blood pressure they showed p = 0.005, thus it can be concluded that the p value is 0.05 (p<a) it can be concluded that Benson relaxation therapy is effective in reducing pressure in hypertensive patients.

DISCUSSION

Blood pressure before the benson relaxation intervention

Before giving Benson relaxation therapy to hypertension sufferers, the researcher first communicated and interacted with the participants, built a trusting relationship, then the researchers measured blood pressure before being given Benson relaxation therapy. The majority of respondents' systolic blood pressure is at most between 140-159, after relaxation of Benson the systolic blood pressure is mostly between 121-139. It can be seen that the most age characteristics in this study were over 46 years of age as many as 11 respondents with a percentage of 61.1% and female sex as many as 13 respondents or 72.8%.. this is in accordance with the results of (Nuraeni, 2019) which states that age and gender have an influence on the incidence of hypertension. This is because the older a person eats, the lower the function of the body's organs. The heart has decreased function, this causes the accommodation of blood vessels to be disrupted as a result of the arteries getting wider and stiffer. In addition, aging also causes hormonal disturbances so that peripheral plasma concentrations increase, reducing the function of glomerulosclerosis intestinal fibrosis which causes increased blood pressure. The same thing was also obtained from the results of (Widjaya et al., 2019) research. In his research, age has a dominant influence on the incidence of hypertension. A person's age affects the performance of the functions of the body's organs including the heart and other organs. This is related to the heart rate associated with stiffness in the arterial walls (Boussetraore et al., 2023).

Based on table 1, it can be seen that the sex most suffering from hypertension is women with a percentage of 72.8%. This is in accordance with data from (Kementerian Kesehatan Republik Indonesia, 2018) where the percentage of hypertension is most dominant in women with a percentage of 36.9%. (Cadeddu et al., 2016) Hypertension is more common in women than in men. This is due to the influence of hormones present in women, the renin-angiotensin system, sympathetic activity and stiffness of the arteries. In addition, (Hastuti et al., 2017) Women stated that women have a high risk of hypertension due to the influence of the level of stress they experience. In addition, education has a role in lowering blood pressure. Based on table 1, it can be seen that the most dominant education is Senior High School with a percentage of 38.9. (Nur'ani & Nisak, 2022) education relates to the ease with which a person absorbs and processes information. The higher a person's education level, the more knowledge he has, so that it is easier to live a healthy and correct lifestyle in lowering and controlling blood pressure.

Blood pressure after the benson relaxation

The blood pressure of hypertensive patients after Benson relaxation showed that the respondents were the most dominant with systolic pressure 120-139 in 11 respondents with a percentage of 61.1% and the highest diastolic 80-89 in 12 respondents or as much as 66.7%. This is because relaxation can relax the mind so that it can reduce the work of the parasympathetic and sympathetic nervous systems. relaxation can be used as an alternative in the treatment of lowering blood pressure. Relaxation is a medium for healing and handling hypertension in lowering blood pressure and relaxation can be done easily and does

not require difficult techniques to do it (Alimansur & Anwar, 2017). Relaxation relaxes the work of the sympathetic and parasympathetic nerves in controlling the blood pressure that appears. The sympathetic nervous system increases stimulation and stimulates the organs of the body so that the heart rate and breathing increase, resulting in narrowing of the peripheral blood vessels and enlargement of the central blood vessels, while the parasympathetic nervous system decreases the function raised by the sympathetic nerves. When you get relaxation, the body relaxes, this causes the body to experience a resting phase, thereby reducing heart rate and breathing which results in decreased blood pressure (Sulistyarini, 2013).

The statistical test used was the paired t-test using 18 respondents, for systolic blood pressure it showed that the result was sig (2-tailed) or p=0.000, and for diastolic blood pressure it showed that the result was sig (2-tailed) or the value p = 0.007 thus, the p value is less than 0.05 (p <a) This shows that there is an effect of benson relaxation therapy on blood pressure in people with hypertension This is consistent with research conducted by (Atmojo et al., 2019) which shows the effect of benson relaxation in reducing blood pressure in hypertensive patients with a p value = 0.000. The same thing was also obtained from the results of the study by (Simandalahi et al., 2019) the results showed a decrease in blood pressure with a duration of 2x a day for 10-20 minutes using an independent t-test analysis with a p value of the intervention group 0.023. (Bhasin et al., 2018) Benson relaxation exercises can reduce blood pressure in hypertensive patients, this is due to changes in gene expression in biological pathways involving NFkB as the main regulatory molecule and the genome for individuals. The response from relaxation is the occurrence of inflammatory processes and immune function related to oxidative stress so that it can contribute to reducing blood pressure. (Bhasin et al., 2018) Physiologically, relaxation can respond to the sympathetic nerves and increase parasympathetic work, thereby reducing heart rate, blood pressure and increasing oxygen consumption (Yusliana et al., 2015) In addition, relaxation also stimulates the secretion of endorphins. So that sufficient oxygen can balance the body, relax which is passed on to the hypothalamus, stimulate the pituitary gland which can increase the production of proopiod melanocothin (POMC). Enkephalin production increases in the adrenal medulla. (Mustika et al., 2019) Benson relaxation is a mind and body intervention that can be used as a complementary therapy without side effects, easy, cheap and safe to be applied by patients. (Benson & Proctor, 2000) Benson relaxation stimulates a person's body to produce and secrete hormones, causing the muscles to work more slowly. (Dewiyuliana et al., 2019) The involvement of family members, the participation of health workers and patients can increase the efficiency of an action so that it can help treat and control the patient's disease.

CONCLUSION

Benson relaxation which is done correctly and regularly is one of the therapeutic options that can be used as an alternative in controlling and reducing blood pressure in hypertensive patients.

SUGGESTION

It is recommended for future researchers to pay attention to Benson's relaxation with the use of hypertension drugs in controlling and lowering blood pressure in hypertensive patients.

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CONFLICTS OF INTEREST

The authors declared that there was no conflict of interest in this study.

AUTHOR CONTRIBUTIONS

Researchers play a role in preparing proposals, collecting data, analyzing data, compiling study results and reporting research results.

REFFERENCES

Ainurrafiq, A., Risnah, R., & Ulfa Azhar, M. (2019). Terapi Non Farmakologi dalam Pengendalian Tekanan Darah Pada Pasien Hipertensi: Systematic Review. *Media*

Publikasi Promosi Kesehatan Indonesia (MPPKI), *2*(3), 192–199. https://doi.org/10.56338/mppki.v2i3.806

Alimansur, M., & Anwar, M. C. (2017). Efek Relaksasi Terhadap Penurunan Tekanan Darah Pada Penderita Hipertensi. *Jurnal Ilmu Kesehatan*, *2*(1), 74. https://doi.org/10.32831/jik.v2i1.31

Ardiansyah. (2012). *Medikal Bedah*. DIVA Press.

Atmojo, J. T., Putra, M. M., Astriani, N. M. D. Y., Dewi, P. I. S., & Bintoro, T. (2019). Efektifitas Terapi Relaksasi Benson Terhadap Tekanan Darah Pada Penderita Hipertensi. *Interest : Jurnal Ilmu Kesehatan*, *8*(1), 51–60. https://doi.org/10.37341/interest.v8i1.117

Benson, & MZ., K. (1975). *The relaxation response*. HarperCollins.

Bhasin, M. K., Denninger, J. W., Huffman, J. C., Joseph, M. G., Niles, H., Chad-Friedman, E., Goldman, R., Buczynski-Kelley, B., Mahoney, B. A., Fricchione, G. L., Dusek, J. A., Benson, H., Zusman, R. M., & Libermann, T. A. (2018). Specific Transcriptome Changes Associated with Blood Pressure Reduction in Hypertensive Patients after Relaxation Response Training. *Journal of Alternative and Complementary Medicine*, *24*(5), 486–504. https://doi.org/10.1089/acm.2017.0053

Cadeddu, C., Franconi, F., Cassisa, L., Campesi, I., Pepe, A., Cugusi, L., Maffei, S., Gallina, S., Sciomer, S., & Mercuro, G. (2016). Arterial hypertension in the female world: Pathophysiology and therapy. *Journal of Cardiovascular Medicine*, *17*(4), 229–236. https://doi.org/10.2459/JCM.0000000000000315

D Novitasari, & Aryana. (2013). Pengaruh Tehnik Relaksasi Benson terhadap Penurunan Tingkat Stres Lansia di Unit Rehabilitasi Sosial Wening Wardoyo Ungaran. *Benson Relaxation Technique, Stress Level, Elderly People.*, *1*(2), 186–195.

Glenys, & Riska. (2017). *Penatalaksanaan farmakologi dan non farmakologi pada penderita hipertensi.* Gramedia Pustaka Utama.

Ibrahim, A., Koyuncu, G., Koyuncu, N., Suzer, N. E., Cakir, O. D., & Karcioglu, O. (2019). The effect of Benson relaxation method on anxiety in the emergency care. *Medicine (United States)*, *98*(21). https://doi.org/10.1097/MD.0000000000015452

Jain, & Ritu. (2011). *Pengobatan alternative untuk mengatasi tekanan darah*. Bramedika pustaka utama.

John, & Creswell. (2017). *Research design pendekatan metode keualitatif, kuantitatif dan campuran* (A. Fawaid & R. kusmini Pamcasari (eds.); II). Pustaka Belajar.

Kandarini, Y. (2017). Tatalaksana Farmakologi Terapi Hipertensi. *Divisi Ginjal Dan Hipertensi RSUP Sanglah Denpasar*, 13–14.

Kementerian Kesehatan Republik Indonesia. (2018). Laporan Nasional Riset Kesehatan Dasar. *Kementrian Kesehatan RI*, 1–582. https://dinkes.kalbarprov.go.id/wp-content/uploads/2019/03/Laporan-Riskesdas-2018-Nasional.pdf

Nuraeni, E. (2019). Hubungan Usia Dan Jenis Kelamin Beresiko Dengan Kejadian Hipertensi Di Klinik X Kota Tangerang. *Jurnal JKFT*, *4*(1), 1. https://doi.org/10.31000/jkft.v4i1.1996

Riskesdas, 2013. (2013). Riset Kesehatan Dasar (RISKESDAS) 2013 Badan Penelitian dan Pengembangan Kesehatan. *Laporan Nasional 2013*, 1–384. https://doi.org/1 Desember 2013

Sajadi, M., Goudarzi, K., Khosravi, S., Farmahini-Farahani, M., & Mohammadbeig, A. (2017). Benson's relaxation effect in comparing to systematic desensitization on anxiety of female nurses: A randomized clinical trial. *Indian Journal of Medical and Paediatric Oncology*, *38*(2), 111–115. https://doi.org/10.4103/ijmpo.ijmpo_183_16

Simandalahi, T., Sartiwi, W., & Novita Angriani L.Toruan, E. (2019). Pengaruh Teknik Relaksasi Benson Terhadap Tekanan Darah Pada Penderita Hipertensi. *Jurnal Endurance*, *4*(3), 641. https://doi.org/10.22216/jen.v4i3.4471

Solehati, T., & Rustina, Y. (2015). Benson relaxation technique in reducing pain intensity in women after cesarean section. *Anesthesiology and Pain Medicine*, *5*(3). https://doi.org/10.5812/aapm.22236v2

Sulistyarini, I. (2013). Terapi Relaksasi untuk Menurunkan Tekanan Darah dan Meningkatkan Kualitas Hidup Penderita Hipertensi. *Jurnal Psikologi*, *40*(1), 28–38.

http://download.garuda.kemdikbud.go.id/article.php?article=352965&val=5021&title=Terapi Relaksasi untuk Menurunkan Tekanan Darah dan Meningkatkan Kualitas Hidup Penderita Hipertensi

Teimouri, F., Pishgooie, S. A., Malmir, M., & Rajai, N. (2019). The Effect of Benson Relaxation on Physiological Criteria in Patients Undergoing Coronary Artery Bypass Graft Surgery. *Complementary Medicine Journal*, *9*(3), 3812–3823. https://doi.org/10.32598/cmja.9.3.3812

Triyanto, & Endang. (2014). *"Pelayanan keperawatan bagi penderita hipertensi secara terpadu."* Graha Ilmu Yogyakarta.

Widjaya, N., Anwar, F., Laura Sabrina, R., Rizki Puspadewi, R., & Wijayanti, E. (2019). Hubungan Usia Dengan Kejadian Hipertensi di Kecamatan Kresek dan Tegal Angus, Kabupaten Tangerang. *YARSI Medical Journal*, *26*(3), 131. https://doi.org/10.33476/jky.v26i3.756

World Health organization. (2022). *Key facts*. aivailabel at https://www.who.int/news-room/fact-sheets/detail/hypertension

yanita. (2022). *Berdamai dengan Hipertensi*. Tim Bumi medika.

Yulanda, G., & Lisiswanti, R. (2017). Penatalaksanaan Hipertensi Primer. *Jurnal Majority*, *6*(1), 25–33.

Yusliana, A., Misrawati, M., & Safri, S. (2015). Efektivitas relaksasi Benson terhadap penurunan nyeri pada ibu postpartum sectio caesarea. *Jurnal Online Mahasiswa*, *2*(2), 944–952.

Zupanec, S., Jones, H., McRae, L., Papaconstantinou, E., Weston, J., & Stremler, R. (2017). A Sleep Hygiene and Relaxation Intervention for Children with Acute Lymphoblastic Leukemia: A Pilot Randomized Controlled Trial. *Cancer Nursing*, *40*(6), 488–496. g/10.1097/NCC.0000000000000457.