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Original Research

The Effect Of Green Color Therapy On Lowering Blood Pressure In The Elderly With Hypertension At The Dungaliyo Health Center

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Abstract

Background: Hypertension is one of the dangerous diseases because it is one of the main risk factors that lead to cardiovascular disease, Hypertension can be overcome by giving non-pharmacological actions, namely green color therapy that can lower blood pressure
Objective: The purpose of this study was to determine the effect of green color therapy on reducing blood pressure in the elderly
Methods: This type of research is a study using Quasy experimental sampling using purposive sampling with a total of 24 respondents
Results: The data obtained in this study were processed using the paired T-test method on the control group obtained a p value of 0.674 (α>0.05) while in the intervention group a p value of 0.001 (α<0.05) was obtained
Conclusion: The conclusion of this study means that there is a significant effect of green color therapy on reducing blood pressure in the elderly with hypertension. So it is necessary to give green color therapy to the elderly who have hypertension to lower blood pressure
Keywords: Hypertension; Elderly; Green Color Therapy

Introduction

Hypertension is caused by several causes, one of which is age (Amzal Mortin Andas et al., 2020; Andas et al., 2022; Mulyana et al., 2022). Age factors can cause an increase in blood pressure due to changes in the structure of large blood vessels so that the lumen becomes narrower and the walls of blood vessels become stiff. The decrease in blood pressure experienced by the intervention group was influenced by the drug amlodipine consumed and supplemented with green color therapy (Siswanto et al., 2020).

According to data from the World Health Organization (WHO), states that the number of people with hypertension in developing countries reaches 40%, while in developed countries only 35%. Adult hypertension sufferers in Southeast Asia account for 36%. According to the WHO representative for Indonesia revealed that there was an increase in the number of people with hypertension by 13%, both in men and women. (Sjaaf &; Paf, 2019).

Data from Basic Health Research (Riskesdas), in 2018 shows that there has been an increase in the number of sufferers increasing the number of people with hypertension aged >18 years since 2013 from 25.8% to 34.1. The data also explains specifically that if based on provinces in Indonesia, in Gorontalo Province there are 29.64% of people with hypertension, while if viewed from hypertension according to the characteristics of 45-54 years old (45.32%), 55-64 years (55.23%), 65-74 years (63.22%), 75+ (69.53%). (Hariawan, 2020).

Based on data from the Gorontalo Regency Health Office, in 2021 the total number of people with hypertension from 21 Puskesmas was 4058 people (Andas et al., 2023). The prevalence of hypertension from the data of the Dungaliyo Health Center, it was found that people with hypertension in 2018 amounted to 507 people, in 2019 there were 531 people, in 2020 there were 1523 people, and data on hypertension patients in the last 1 month, namely in March 2021, amounted to 120 people.

Methods

Study Design

The type of research conducted was quantitative research with an experimental Quasy design approach sampling using purposive sampling with a total of 24 respondents. This research design is used to determine the influence that arises as a result of treatment.

Samples/Participants

The type of research conducted was quantitative research with an experimental Quasy design approach sampling using purposive sampling with a total of 24 respondents. This research design is used to determine the influence that arises as a result of treatment.

Instruments

In this study using tools and materials in the form of questionnaires made by researchers using the Guttman measurement scale. Researchers also used demographic questionnaires to determine the characteristics of respondents which included names (initials) age, gender, education, occupation.

Interventions

The intervention was carried out by obtaining appropriate research samples, after the intervention gave green color to be seen by respondents. Before intervening, researchers first measured blood pressure, and after the intervention, researchers again measured blood pressure.

Data Collection

Primary data were obtained through observations and interviews with questionnaires. Secondary data data obtained directly from the Dungaliyo health center, Dungaliyo District, Gorontalo Regency in the form of patient recaps and other records that support the study.

Data Analysis

Data is analyzed by computerized data processing using the statistical program Package For The Social Science (SPSS). After the data is tabulated, data processing is carried out using SPSS computer statistical codes and then presented in the form of frequency distribution tables accompanied by explanations of each variable studied. Univariate analysis is carried out on each research variable, especially to see the display of frequency distribution and percentage of each variable. Bivariate analysisTo see the effect of the independent variable on the dependent variable before green color therapy and after green color therapy using statistical paired sample T-test <0.05.

Ethical Considerations

This research has received ethical approval from the nursing study program of the University of Muhammadiyah Gorontalo.

Results

Characteristics of Respondents

Tabel 1.1
Distribution of respondents' characteristics at Dungaliyo Health Center

Variable	Kategori	Sum	Presentase (%)
Age	Erderly	22	91,7
	Old	2	8,3
	Total	**24**	**100**
Gender	Woman	16	66,7
	Man	8	33,3
	Total	**24**	**100**
Education	SD	24	100
	Total	**24**	**100**
Work	IRT	16	66,7
	Farmer	8	33,3
	Total	**24**	**100**

Source : Data Primer, 2021

Univariate Analysis

Table 1.2
Results of blood pressure measurement before and after green therapy in the intervention group

Variable	Before		After		Sum	
	N	%	N	%	N	%
Pre Hipertensi	0	0	1	8,3	1	4
Grade 1 hypertension	3	25	9	75	12	50
Grade 2 hypertension	9	75	2	15,7	11	46
Total	**12**	**100**	**12**	**100**	**24**	**100**

Source : Data Primer, 2021

Table 1.3
Results of blood pressure measurement before and after treatment in the control group

Variable	Before		After		Sum	
	N	%	N	%	N	%
Pre Hipertensi	0	0	0	0	0	0
Grade 1 hypertension	6	50	7	58,3	13	54
Grade 2 hypertension	6	50	5	41,7	11	46
Total	**12**	**100**	**12**	**100**	**24**	**100**

Source : Data Primer, 2021

Bivariate Analysis

Table 1.4
Differences in blood pressure before and after in the intervention group

	N	%	N	%
Pre Hipertensi	0	0	1	8,3
Grade 1 hypertension	3	25	9	75
Grade 2 hypertension	9	75	2	15,7
Total	**12**	**100**	**12**	**100**

Source : Data Primer, 2021

Table 1.5
Differences in blood pressure before and after in the control group

Variable	Before		After		P Value
	N	%	N	%	
Pre Hipertensi	0	0	0	0	0,674
Grade 1 hypertension	6	50	7	58,3	
Grade 2 hypertension	6	50	5	41,7	
Total	**12**	**100**	**12**	**100**	

Source : Data Primer, 2021

Table 1.6
Blood pressure differences after the intervention and control groups

Variable	Intervensi		Control		P Value
	N	%	N	%	
Pre Hipertensi	1	8,3	0	0	0,166
Grade 1 hypertension	9	75	7	58,3	
Grade 2 hypertension	2	15,7	5	41,7	
Total	**12**	**100**	**12**	**100**	

Source : Data Primer, 2021

Discussion

Based on the univariate analysis table, it can be known that blood pressure before green therapy was given in the intervention group, namely the category of grade 1 hypertension as many as 3 respondents (25%) and degree 2 hypertension as many as 9 respondents (75%). While blood pressure after being given green therapy is the category of hypertension grade 1 as many as 9 respondents (75%), hypertension degree 2 as many as 2 respondents (25%) and pre-hypertension which is 1 respondent (8.3%).

According to Arthini et al., (2012), green color therapy refers to the concept of chakras in Ancient Indian healing science, green color is able to reduce tension, lower blood pressure, suppress sympathetic system activity, and dilate capillaries. So this can prevent the risk of occurrence or increased blood pressure in the elderly with hypertension. This study is in line with research conducted by Panti et al., (2017) entitled "The Effect of Green Color Therapy on Blood Pressure with Hypertension While Denpasar" obtained results of a decrease in blood pressure after being given green color therapy.

Based on the univariate analysis table, it can be known that blood pressure before treatment was given to the control group, namely the category of hypertension grade 1 as many as 6 respondents (50%) and hypertension degree 2 as many as 6 respondents (50%). While blood pressure after treatment was given the category of hypertension grade 1 as many as 7 respondents (58.3%) and hypertension degree 2 as many as 5 respondents (41.7%). The control group in this study was given treatment in the form of consumption of antihypertensive drug amlodipine every day.

According to Ardita (2020), that antihypertensive drugs are one of the pharmacological therapies of hypertension which must be consumed every day to reduce high blood pressure, people with hypertension must comply with it. The degree of adherence to taking medication is a determinant of the success of therapy. Adherence and good understanding in carrying out therapy can affect blood pressure and can prevent complications.

Based on the bivariate analysis table of blood pressure measurements before and after green color therapy was given to respondents, it was found that the most blood pressure before treatment was in the 2nd degree hypertension category with 9 respondents (75%) while blood pressure after green color therapy was most in the 1st degree hypertension category as many as 9 respondents (75%), Of the 12 respondents in the intervention group who experienced a decrease in blood pressure, there were 3 respondents who before being given green color therapy had very high blood pressure of ≥170/100 mmHg.

Researchers assume this is due to the lifestyle and diet of respondents who are not good. Where 2 out of 3 respondents have a history of alcoholics and smokers so that this affects the blood pressure of these respondents to be high. While 1 other respondent based on the results of the interview said that respondents often consume foods with high salt content. According to Fahlove et al., (2019).

Based on the bivariate analysis table of blood pressure measurements before and after treatment in control group respondents, it was found that the most blood pressure before treatment was in the category of hypertension grade 2 with a total of 6 respondents (50%) while blood pressure after treatment was most in the category of hypertension grade 1 as many as 7 respondents (58.3%).

According to Susanto, et al (2018) that compliance and good understanding in carrying out therapy can affect blood pressure and can gradually prevent complications. Hypertension medications known today have been shown to control blood pressure in hypertensive patients and also play a role in lowering the risk of developing cardiovascular complications.

Based on the results of the study, the average value of blood pressure in the intervention group before green therapy was given, namely systolic blood pressure 160.83 mmHg and diastolic 95.00

mmHg. After green therapy, the average value of systolic blood pressure was 146.67 mmHg and diastolic 89.17 mmHg. While the average value of blood pressure before in the control group obtained a systolic value of 158.33 mmHg and diastolic blood pressure of 95.00 mmHg. Furthermore, the average value of blood pressure after treatment in the control group was systolic value of 156.67 mmHg and diastolic 97.50 mmHg.

According to Arthini, et al (2012), that green color therapy refers to the concept of chakras in Ancient Indian healing science, green color is able to reduce tension, lower blood pressure, suppress sympathetic system activity, and dilate capillaries. The mechanism of using color therapy in lowering blood pressure has been known through stimulation of parasympathetic nerves that are more dominant so that the renin enzyme produced by the kidneys will not be produced so that the occurrence of vasoconstriction of blood vessels will be avoided which if the occurrence of vasoconstriction of blood vessels can be prevented then blood pressure can decrease.

Based on the description above, researchers argue that green color therapy can reduce blood pressure in hypertensive elderly. For this reason, the need for the elderly with hypertension to be given more knowledge related to the benefits of green color therapy on lowering blood pressure and also encouragement in doing green color therapy, obeying the consumption of antihypertensive drugs and maintaining a healthy diet by avoiding fatty foods and having excess salt content. If this is done regularly, it can reduce and stabilize blood pressure significantly.

Conclusion

Based on the results of a study entitled "The Effect of Green Color Therapy on Blood Pressure Reduction in the Elderly with Hypertension at the Dungaliyo Health Center", it can be concluded that there is an effect of green color therapy on reducing blood pressure in the elderly with hypertension at the Dungaliyo Health Center with the results of p value = 0.001 ($\alpha<0.05$).

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References

Amzal Mortin Andas, Christantie Effendi, & Sri Setyarini. (2020). Validity and Reliability Test on Sleep Quality Scale (SQS) Instruments in Indonesia Version on Cancer Patients. International Journal of Research in Pharmaceutical Sciences, 11(4), 7275–7280. https://doi.org/10.26452/ijrps.v11i4.3865

Andas, A. M., Harahap, D., Purnamasari, A., & Prima, A. (2022). Effectiveness of cognitive behaviour therapy (CBT) to improve the sleep quality of the elderly in hospital. International Journal of Health Sciences, 6(April), 1669–1678. https://doi.org/10.53730/ijhs.v6ns4.6320

Andas, A. M., Sansuwito, T. bin, Said, F. M., Puspitasari, I., Prima, A., & Andas, N. H. (2023). The Effect of Box Breathing on Sleep Disorders in Elderly at Tresna Werdha Social Institution. Malaysian Journal of Medicine and Health Sciences, 19(Supplement 9), 197–204. https://doi.org/10.47836/mjmhs.19.s9.29

Arthini, S. N. (2012). The Effect Of Green Color Therapy On Systolic Blood Pressure In The Elderly At Wana Seraya Nursing Home Denpasar. Journal Of Faculty Of Medicine, Udayana University.

Fahlove, M. A., Asrinawaty., S. Anggraeni., E. A (2019). The Relationship Between Diet And Lifestyle With Hypertension In The Elderly In The Sungai Besar Banjarbaru Health Center Area. Kalimantan Islamic University Muhammad Arsyad Al Banjari.

Hariawan, H. (2020). Journal Of Health Service Sasambo. 1(2), 75–79.

Siswanto, Y., Widyawati, S. A., Wijaya, A. A., &; Salfana, B. D. (2020). Hypertension In Adolescents In Semarang Regency. 1(186), 11–17.

Sjaaf, F., &; Paf, P. (2019). Factsors Associated With The Incidence Of Hypertension In The Elderly At The Lubuk Minturun Cold Water Health Center. Nov, 68–77.

Susanto, D. H., Fransiska, S., Felicia, Ab. W., Feronika, E., Goddess, Wwp. (2018). Risk Factors For Non-Adherence To Taking Antihypertensive Drugs In Hypertensive Patients At Puskesmas Kecamatan Palmerah, July 2016. J. Kedokt Meditek Volume 24, No. 68, Oct-Dec 2018

Arthini, S. N. (2012). The Effect Of Green Color Therapy On Systolic Blood Pressure In The Elderly At Wana Seraya Nursing Home Denpasar. Journal Of Faculty Of Medicine, Udayana University. Cahya, K. D. (2018). Risk Factors For Hypertension For Students On Behavior And Association.

Cohen, D. L. (2020). Resistant Hypertension : Where Are We Now And Where Do We Go From Here ?

Damanti, E. N. (2017). The Germas Program "Doing Physical Activity" As An Effort To Prevent Hypertension. Delacroix, S., Chokka, R. G., & Worthley, S. G. (2019). Journal Of Neurology &;

Neurophysiology Hypertension : Pathophysiology And Treatment. 5(6). Https://Doi.Org/10.4172/2155-9562.1000250

Dhungana, R. R., Pandey, A. R., & Shrestha, N. (2021). Trends In The Prevalence , Awareness , Treatment , And Control Of Hypertension In Nepal Between 2000 And 2025 : A Systematic Review And Meta-Analysis. 2021.

Dominiczak, A. F., Grassi, G., Jordan, J., & Poulter, N. R. (2019). Hhs Public Access. Https://Doi.Org/10.1038/Nrdp.2018.14.Hypertension

Fahlove, M. A., Asrinawaty., S. Anggraeni., E. A (2019). The Relationship Between Diet And Lifestyle With Hypertension In The Elderly In The Sungai Besar Banjarbaru Health Center Area. Kalimantan Islamic University Muhammad Arsyad Al Banjari.

Foex, P., & Sear, J. W. (2017). Hypertension : Pathophysiology And Treatment. June. Https://Doi.Org/10.1093/Bjaceaccp/Mkh020 Gadingrejo, P., Gadingrejo, P., Gadingrejo, W. P., & Gadingrejo, P. (2020). Jurnal Wacana Kesehatan Salt Consumption Pattern With Hypertension In Elderly. 5.

Hariawan, H. (2020). Journal Of Health Service Sasambo. 1(2), 75–79. Jatnika, G., Rudyana, H., & Simarmata, F. U. B. (2019). The Effect Of Green Color Therapy On Blood Pressure In The Elderly With Hypertension In Rw 3 Of The Cimahi Tengah Health Center Work Area. 6(1), 1–6.

Knowledge, R. B., Zaenurrohmah, D. H., Rachmayanti, R. D., Timur, J., Ampel, K., &; Semampir, K. (2017). The Relationship Of Knowledge And History Of Hypertension With 47 Measures To Control Blood Pressure In The Elderly. August, 174–184. Https://Doi.Org/10.20473/Jbe.V5i2.2017.174-184

Lisnasari. (2020). Literature Review: The Effect Of Green Color Breathing Therapy On Blood Pressure In Hypertensive Patients. Bachelor Of Nursing Study Program. Faculty Of Nursing. Bhakti Kencana University.

Moomina Siauta. (2020). Effectiveness Of Walking Exercise Therapy On Lowering Blood Pressure In Hypertensive Clients. 12(4), 735–742.

Mulyana, Z. A., Andas, A. M., & Astuti, P. (2022). Prevalensi Kualitas Tidur Keluarga di Ruang Rawat Inap RS Izza Karawang di Masa Pandemi Covid-19. Jurnal Surya Medika, 7(2), 190–198. https://doi.org/10.33084/jsm.v7i2.2815

Notoadmodjo. (2012). Health Research Methodology.

Nuraeni, Eni. (2019). Age And Sex Relationship At Risk With Hypertensive Incidence At Clinic X Tangerang City. Jkft Journal: Muhamadiyah University Tangerang. Vol 4 No 1 Year 2019

Panti, D. I., Tresna, S., Wana, W., &; Denpasar, S. (2017). The Effect Of Green Color Therapy On Systolic Blood Pressure In The Elderly At The Tresna Werdha Wana Social Institution While Denpasar.

Prasetyo, D., Nur, S., Yoyok, A., & Prasetyo, B. (2019). Pengaruh Green Color Breathing Therapy Terhadap Penurunan Tingkat Stres Pada Pasien Hemodialisa The Effect Of Green Color Breathing Therapy Towards Reduction Of Stress Levels In Hemodialyzed Patients. 10(2), 86–96. Https://Doi.Org/10.22219/Jk.V10i2.7787.

Siswanto, Y., Widyawati, S. A., Wijaya, A. A., &; Salfana, B. D. (2020). Hypertension In Adolescents In Semarang Regency. 1(186), 11–17.

Sjaaf, F., &; Paf, P. (2019). Factors Associated With The Incidence Of Hypertension In The Elderly At The Lubuk Minturun Cold Water Health Center. Nov, 68–77.

Susanto, D. H., Fransiska, S., Felicia, Ab. W., Feronika, E., Goddess, Wwp. (2018). Risk Factors For Non-Adherence To Taking Antihypertensive Drugs In Hypertensive Patients At Puskesmas Kecamatan Palmerah, July 2016. J. Kedokt Meditek Volume 24, No. 68, Oct-Dec 2018

Takemura, Y., Kido, K., Kawana, H., Yamamoto, T., & Sanuki, T. (2021). Effects Of Green Color Exposure On Stress , Anxiety , And Pain During Peripheral Intravenous Cannulation In Dental Patients Requiring Sedation.

Tirtasari, S., &; Kodim, N. (2019). Prevalence And Characteristics Of Hypertension In Young Adults In Indonesia. 1(2), 395–402.

Kawana, H., Yamamoto, T., & Sanuki, T. (2021). Effects Of Green Color Exposure On Stress , Anxiety , And Pain During Peripheral Intravenous Cannulation In Dental Patients Requiring Sedation.

Unger, T., Borghi, C., Charchar, F., Khan, N. A., Poulter, N. R., Prabhakaran, D., 48 Ramirez, A., Schlaich, M., Stergiou, G. S., Tomaszewski, M., Wainford, R. D., Williams, B., & Schutte, A. E. (2020). Clinical Practice Guidelines 2020 International Society Of Hypertension Global Hypertension Practice Guidelines International Society Of Hypertension. 1334–1357. Https://Doi.Org/10.1161/Hypertensionaha.120.15026

Wihandani, D. M. (2019). The Prevalence Of Hypertension In Overweight Middle Adults In Denpasar In 2018. 10(3), 821–824. Https://Doi.Org/10.15562/Ism.V10i3.490

Wondmieneh, A., Gedefaw, G., Getie, A., & Demis, A. (2021). Self-Care Practice And Associated Factors Among Hypertensive Patients In Ethiopia : A Systematic Review And Meta-Analysis. 2021.