Journal of Community Health Provision
Vol. 2, Issue 1, 2022
Page 42-48
DOI:

Effect of Green Color Therapy on Blood Pressure Reduction in Elderly with Hypertension at Dungaliyo Health Center

Nurliah[1], Nikmawati puluhulawa[1], Masni A. Karim[1]

[1]Bachelor of Nursing Study Program, University of Muhammadiyah Gorontalo, Indonesia
Email: nurliahmkep@gmail.com

Abstract. *Hypertension is a health problem that is quite dangerous in the world, because hypertension is a major risk factor that leads to cardiovascular diseases such as heart attack, heart failure, stroke and kidney disease. The design of this study used a quasi-experimental using a paired T-test. By involving the control group and the intervention group, sampling using purposive sampling, obtained 20 respondents, then given green color therapy. The results showed that the p value was 0.001 (p <0.05), which means that there is a significant effect. 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. So it is hoped that green color therapy should be given to reduce blood pressure in the elderly with hypertension*.

Keywords: *: Green Color Therapy, Elderly, Hypertension*

Received: November 19, 2021 Received in Revised: December 16, 2021 Accepted: January 11, 2022

INTRODUCTION

Hypertension is a health problem that is quite dangerous in the world, because hypertension is a major risk factor that leads to cardiovascular diseases such as heart attack, heart failure, stroke and kidney disease (Siswanto et al., 2020). Hypertension is a disease that often appears in people's lives, and in general this disease is very risky, because it can cause disease complications in the elderly group.

Old age is said to be the final stage of development in the human life cycle. According to Law Article 1 paragraph (2), (3), (4), No. 13 of 1998 concerning health, it is stated that the elderly are people who have reached the age of 60 years and over. The elderly generally experience various health problems due to changes in biological, psychological, social, and economic functions.

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 it is only 35%. Adult hypertension sufferers in Southeast Asia comprise 36%. 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, an increase in the number of people with hypertension aged >18 years since 2013 from 25.8% to 34.1. The data also explains specifically that if it is based on the province in Indonesia in Gorontalo Province, there are 29.64% people with hypertension, while if we look at hypertension according to the characteristics of age 45-54 years (45.32%), 55-64 years (55 years). ,23%), 65-74 years old (63.22%), 75+ (69.53%) (Hariawan, 2020)

Based on data from the Gorontalo District Health Office, in 2021 the total number of people with hypertension from 21 Puskesmas was 4058 people. The prevalence of hypertension from the data of the dungaliyo health center, found hypertension sufferers in 2018 amounted to 507 people, in 2019 there were 531 people, in 2020 there were 1523 people, and data for hypertension sufferers in the last 1 month, namely in March 2021, amounted to 120 people.

Hypertension is caused by several causes, one of which is the age factor. The age factor 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 the blood vessels become stiff. The decrease in blood pressure experienced by the intervention group was influenced by the amlodipine drug that was consumed and supplemented with green color therapy.

Many methods have been found to treat hypertension, both pharmacologically and non-pharmacologically. Pharmacological treatment consists of administering drugs that are diuretic, sympathetic, beta-blockers, vasodilators, and paying attention to the working mechanism and compliance in carrying out treatment, where the sufferer must take medication regularly. This causes the patient to become bored, so that hypertension sufferers are less obedient to taking medication. In addition, the current treatment for hypertension has not been effective because it only reduces the incidence rate by 8%, the price of drugs is relatively expensive and there are side effects from using drugs, thus making people stop taking treatment. One of the prevention of hypertension drug dependence is conducting non-pharmacological therapy for hypertension, namely, exercising regularly, maintaining weight, reducing salt intake, giving up smoking, quitting alcohol consumption, as well as complementary therapies, one of which is green color therapy. Green color therapy is color therapy that uses a deep breathing relaxation method by focusing on imagining the air around you when you inhale and exhale with green (Prasetyo et al., 2019).

In a previous study by (Jatnika et al., 2019) it was found that the average blood pressure in the control group before being given green color therapy with a systolic blood pressure value of 176.91 mmHg and a diastolic blood pressure of 108.00 mmHg while the blood pressure afterward was obtained systolic blood pressure 170.45 mmHg and diastolic 95.45 mmHg. Based on the results of this study, it can be stated that there was a decrease in blood pressure after being given green color therapy.

Based on the above background, the researchers are interested in researching "Is there any effect of green color therapy on blood pressure in the elderly with hypertension in the Dungaliyo Community Health Center work area?"

ISSN 2776-1150 (Print), ISSN 2776-1169 (online)

METHODS

This research was carried out at the Dungaliyo Health Center, Dungaliyo District, Gorontalo Regency in September 2021 with primary data collection through direct observation sheets to respondents suffering from hypertension in Dungaliyo District. The research method used in this study is a quasi-experimental study using a paired T-test. By involving the control group and the intervention group, sampling using purposive sampling, obtained 20 respondents.

RESULTS AND DISCUSSION

Table 1. Distribution of characteristics of respondents in Dungaliyo Health Center

Variable	Category	Sum	Present (%)
Age	Elderly	22	91,7
	Old Age	2	8,3
	Total	**24**	**100**
Gender	Woman	16	66,7
	Man	8	33,3
	Total	**24**	**100**
Education	Elementary School	24	100
	Total	**24**	**100**
Work	House Wife	16	66,7
	Right now	8	33,3
	Total	**24**	**100**

Source: Primary data processing (2021)

Based on the table above, it can be seen that the characteristics of the respondents in terms of age are mostly in the elderly category (Erderly) as many as 22 respondents (91.7%). Furthermore, the characteristics based on gender were found to be the most female with 16 respondents (66.7%). The following is for education as a whole, respondents in this study have a history of elementary school education, namely 24 respondents (100%). And lastly, the characteristics of respondents based on occupation were found to be mostly in the IRT job category, namely 16 respondents (66.7%).

Table 5. Results of blood pressure measurements before and after being given green color therapy in the intervention group

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

Source: Primary data processing (2021)

Based on the table above, it was found that the highest blood pressure before being given green color therapy was in the intervention group, namely the category of hypertension degree 2 as many as 9 respondents (75%), while the blood pressure after being given green color therapy in the intervention group was the most in the category 1 hypertension category as many as 9 respondents (75%).

ISSN 2776-1150 (Print), ISSN 2776-1169 (online)

Table 5. Results of blood pressure measurements before and after being given green color therapy in the intervention group

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

Source: Primary data processing (2021)

Based on the table above, it was found that the highest blood pressure before being given green color therapy was in the intervention group, namely the category of hypertension degree 2 as many as 9 respondents (75%), while the blood pressure after being given green color therapy in the intervention group was the most in the category 1 hypertension category as many as 9 respondents (75%).

Table 6. Results of blood pressure measurements before and after treatment in the control group

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

Source: Primary data processing (2021)

Based on the table above, it was found that the blood pressure before treatment in the control group was mostly in the category 1 hypertension, namely 6 respondents (50%). Meanwhile, the highest blood pressure after treatment in the control group was the category of hypertension grade 1 as many as 7 respondents (58.3%).

Table 7. Differences in blood pressure before and after in the intervention group

Variable	Before		After Variable	
	N	%	N	%
PreHypertension	O	0	1	8,3
Hypertension Degree 1	3	25	9	75
Hypertension Degree 2	9	75	2	15,7
Total	12	100	12	100

Source: Primary data processing (2021)

Based on the table above, it can be seen the difference in blood pressure before and after being given green color therapy to respondents it was found that the highest blood pressure before being given treatment was in the category 2 hypertension degree as many as 9 respondents (75%), while the respondents' blood pressure after being given color therapy Green is the most in the category of hypertension degree 1, which is 9 respondents (75%). In analyzing the data, the researcher used the paired T-test because the data obtained were normally distributed. The results of the paired T-test obtained were p value 0.001 ($\alpha<0.05$), meaning that there was an effect of green color therapy on

reducing blood pressure in the elderly with hypertension at the Dungaliyo Health Center.

Table 8. Differences in blood pressure before and after in the control group

Variable	Before		After Variable		P-Value
	N	%	N	%	
Pre Hypertension	O	0	0	0	0,674
Hypertension Degree 1	3	50	7	58,3	
Hypertension Degree 2	6	50	5	15,7	
Total	12	100	12	100	

Source: Primary data processing (2021)

Based on the table above, it can be seen that the blood pressure in the first meeting in the control group was obtained each 6 respondents (50%) were in the category of hypertension grade 1 and hypertension grade 2. respondents were in the category 1 hypertension, namely 7 respondents (58.3%) and 5 respondents (41.7%) were in the 2nd degree hypertension category. hypertension grade 1. The results of the paired T-test in the control group were obtained, namely p value 0.674 (> 0.05), meaning that there was no significant decrease in the blood pressure of the elderly in the control group.

According to Arthini et al., (2012), green color therapy refers to the chakra concept 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 occurring or increasing 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 Seraya Denpasar" showed a decrease in blood pressure after being given green color therapy.

Based on the description above, the researcher assumes that hypertension is a long-term disease that requires the sufferer to perform pharmacological therapy by taking antihypertensive drugs to suppress the increase in blood pressure. However, currently there are many studies on non-pharmacological therapies that can be given to patients with hypertension, one of which is green color therapy. Green color therapy can dilate blood vessels so this can lower blood pressure.

Based on the bivariate analysis table measuring blood pressure before and after being given green color therapy to the respondents, the results showed that the highest blood pressure before being given treatment was in the category 2 hypertension with a total of 9 respondents (75%) while blood pressure after being given green color therapy was the most. were in the category of hypertension grade 1 as many as 9 respondents (75%). The results of statistical test analysis about the effect of giving green color therapy to lowering blood pressure using the Paired T test showed that the p value was 0.001 (α <0.05) meaning that there was a decrease in blood pressure in the elderly after being given green color therapy.

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, namely 170/100 mmHg. Researchers assume this is due to the poor lifestyle and eating patterns of the respondents. Where 2 out of 3 respondents have a history of alcoholics and smokers so this affects the blood pressure of these respondents to be high. Meanwhile, 1 other respondent based on the results of the interview said that the respondent often consumed foods with a high salt content.

According to Fahlove et al., (2019) that lifestyle and diet are factors that influence the incidence of hypertension. The lifestyle that Unhealthy can increase the risk of developing hypertension, while unhealthy eating patterns such as consuming excess salt can trigger constriction of blood vessels, causing the heart muscle to pump harder which leads to increased blood pressure.

According to Lisnasari (2020), color therapy is a technique for treating disease through the application of color, so that the body remains healthy and improves balance in the body before it causes physical and mental problems. One of the colors that is often used for therapeutic purposes on health is green. Green is the fourth color of the spectrum that brings a refreshing impression because it is associated with nature and plants. Green can provide a sense of security, as well as balance and harmony.

This study is in line with research conducted by Jatnika et al., (2019), in their research entitled "The effect of green color therapy on blood pressure in the elderly with hypertension in RW 3 working area of the Central Cimahi Health Center" which showed that the effectiveness of green color therapy on changes in blood pressure in respondents after being given green color therapy for 7 days showed a significant change as indicated by the results of the statistical test p value of 0.001 (α <0.05) meaning that there was a decrease in blood pressure after being given green color therapy. This study is also in line with research conducted by Panti et al., (2017) with the title of the research "The effect of green color therapy on blood pressure with hypertension in Seraya Denpasar" which states that there is an effect of green color therapy on changes in blood pressure in hypertensive patients

CONCLUSION

Based on research on the effect of green color therapy on reducing blood pressure in the elderly with hypertension at the Dungaliyo Health Center, the following conclusions can be drawn; (1) Before the green color therapy treatment, there were 9 respondents (75%) with grade 2 hypertension category, and 3 respondents (25%) with grade 1 hypertension category; (2) After being given green color therapy there was a decrease in blood pressure with the results of 1 respondent (8.3%) in the pre-hypertension category, 9 respondents (75%) in the 1st degree hypertension category and 2 respondents (16.7%) in the 2nd degree hypertension category; (3) There is an effect of green color therapy on reducing blood pressure in the elderly with hypertension at Dungaliyo Health Center with p value = 0.001 (α<0.05).

REFERENCES

Arthini, S. N. (2012). *Pengaruh Terapi Warna Hijau Terhadap Tekanan Darah Sistolik pada Lansia di Panti Werdha Wana Seraya Denpasar*. Jurnal Fakultas Kedokteran Universitas Udayana.

Hariawan, H. (2020). *Jurnal pengamas kesehatan sasambo*. *1*(2), 75–79.

Jatnika, G., Rudyana, H., & Simarmata, F. U. B. (2019). *Pengaruh terapi warnahijau terhadap tekanan darah pada lansia dengan hipertensi di RW 3 wilayah kerja puskesmas Cimahi Tengah*. *6*(1), 1–6.

Lisnasari. (2020). *Literature Review: Pengaruh Green Color Breathing Therapy Terhadap Tekanan Darah pada Penderita Hipertensi*. *Program Studi Sarjana Keperawatan. Fakultas Keperawatan. Universitas Bhakti Kencana*.

ISSN 2776-1150 (Print), ISSN 2776-1169 (online)

Panti, D. I., Tresna, S., Wana, W., & Denpasar, S. (2017). *Pengaruh Terapi Warna Hijau Terhadap Tekanan Darah Sistolik Pada Lansia Di Panti Sosial Tresna Werdha Wana Seraya 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). *Hipertensi pada Remaja di Kabupaten Semarang*. *1*(186), 11–17.

Sjaaf, F., & Paf, P. (2019). *Faktor- Faktor yang Berhubungan dengan Kejadian Hipertensi pada Lansia di Puskesmas Air Dingin Lubuk Minturun*. *November*, 68–77.

ISSN 2776-1150 (Print), ISSN 2776-1169 (online)
