



The Effectiveness of Warm Water Soak Therapy on Feet and Classical Music Therapy on Blood Pressure of Hypertensive Clients at Puskesmas Ijen Bondowoso

^KHandono Fatkhur Rahman¹, Saipul Bahri², Heri Siswanto³

¹Fakultas Keperawatan Universitas Nurul Jadid Probolinggo

²Puskesmas Ijen Bondowoso

³RSUD dr. Koesnadi Bondowoso

Email Penulis Korespondensi (^K): Handono.hfc@gmail.com

ABSTRACT

Hypertension is one of the diseases that attack on the cardiovascular system. Management to overcome hypertension can use pharmacological therapy and nonpharmacological therapy. Non-pharmacological therapies for hypertension include soaking warm water on the feet and classical music therapy. This study aims to determine the effectiveness of warm water soak therapy in the feet and classical music therapy on hypertension client blood pressure. The research design used in this research is using Pre Post experimental design. Sampling techniques use simple random sampling. The number of respondents in this study were 20 respondents for warm water bath therapy and 20 respondents for classical music therapy. The results of this study indicate that in systolic blood pressure there is a difference in the effectiveness of warm water soak therapy in the feet and classical music therapy with p value $(0.036) < \alpha (0.05)$ while diastole blood pressure does not differ in the effectiveness of warm water soak therapy in foot and classical music therapy with p-value diastole $(0.108) > \alpha (0.05)$. Based on the mean value, it is known that warm water soak therapy on the foot has a mean systole value (150 mmhg) and mean diastole value (89.67 mmhg), while the mean value of sistole in classical music therapy (154.5 mmhg) and the mean diastole value of classical music therapy (92 mmhg) so that from the mean results the soak therapy in warm water on the feet is more effective in reducing blood pressure.

Keywords: Hypertension, Soak Warm Water on Feet, Classical Music

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INTRODUCTION

Hypertension is a disease that attacks the cardiovascular system. Hypertension cannot be cured, hypertension can be controlled through medication and good care ¹.

The results of Riset Kesehatan Dasar (Riskesdas) in 2018 were the prevalence of hypertension in Indonesia as much as 34.11%. Several provinces in Indonesia that experience a prevalence of hypertension above the national rate (25.8%), namely East Java, Bangka Belitung, Central Java, Central Sulawesi, D.I Yogyakarta, Riau, West Sulawesi, Central Kalimantan, and West Nusa Tenggara. East Java Province is included in the category of provinces with a prevalence above the national rate which has a prevalence of 26.2% ². For Bondowoso Regency, the number of suffering from hypertension served in January 2018 was 6,971 people, increasing to 7,659 people in December 2018.

Mortality and morbidity from hypertension can be controlled by controlling factors that affect blood pressure and through good treatment and care ³. Hypertension can be treated pharmacologically and non pharmacologically. Pharmacological treatment using drugs. The use of drugs can only overcome the problems are temporary and do not heal (Rahman, Handayani, & Sholehah, 2019). These non-pharmacological treatment is a natural medicine therapies such as with herbal therapy, nutritional therapy, progressive relaxation, meditation, laughter therapy, music therapy, acupuncture, akupressur, aromatherapy, reflexology and hydrotherapy. Various types of hydrotherapy, a method commonly used in hydrotherapy bath soak ie, sitzbath, water massage, wrap with a damp cloth, compress, soak feet ⁵.

Scientifically warm water for the body have a physiological impact. The first affects the blood vessels where the warmth of the water makes smooth blood circulation, the second is the factor loadings in the water that will strengthen the muscles and ligaments that affects the joints of the body. In addition to foot soak therapy with warm water, there is also non-pharmacological therapy, namely music therapy. Music therapy is a therapy of non pharmacological which aims to improve the physical and mental qualities through stimulation of sound consisting of melody, rhythm, harmony, timbre, form and style organized in such a way so as to create music that is beneficial to physical and mental health ⁶. Seeing the benefits of warm water soak therapy and music therapy, researchers are empowered to study effectiveness of therapeutic foot soak with warm water and music therapy on blood pressure in hypertensive clients in Puskesmas Ijen.

METHODS

The research design used in this study was a pre-experimental design with a pre-post test only design approach. The number of samples studied was 20 respondents for foot bath

therapy and 20 respondents for classical music therapy. The sampling technique used in determining the sample in this study was simple random sampling. Data were collected for 3 days and measured blood pressure before and after foot bath therapy and classical music therapy.

RESULT

Table 1. Age Distribution Clients with Hypertension

Variable	Mean \pm SD	Median	Min-Max	95%CI
Foot Soak Therapy	60,25 \pm 11,75	62,5	36 – 77	54,74 - 65,75
Classical Music Therapy	55,40 \pm 10,87	56,5	27 – 75	50,31 - 60,48

In Table 1, the average age of clients with hypertension in the foot soak therapy group with warm water is 60.25 years. The youngest age is 36 years old and the oldest age is 77 years. The estimation results of the average age interval of hypertensive clients in the foot soaking therapy group with warm water were 54.74 - 65.75 years. The average age of clients with hypertension in the classical music therapy group was 55.40 years. The youngest age is 27 years old and the oldest age is 75 years. The results of the interval estimation mean age of hypertensive clients in the classical music group ranged from 50.31 to 60.48 years.

Table 2. Gender Distribution of Clients with Hypertension

Gender	Foot Soak Therapy		Classical Music Therapy	
	f	(%)	f	(%)
Man	7	35,0	8	40
Woman	13	65,0	12	60
Total	20	100	20	100

Based on Table 2, the gender of the foot soak therapy group was male as many as 7 respondents and female as many as 13 respondents. While gender in the classical music therapy group, male as many as 8 respondents, and female as many as 12 respondents.

Table 3. Distribution of Client Education with Hypertension

Education	Foot Soak Therapy		Classical Music Therapy	
	f	(%)	f	(%)
Primary School	9	45	7	35
Junior High School	7	35	9	45
Senior High School	4	20	3	15
College	0	0	1	5
Total	20	100	20	100

Based on Table 3, there were 9 respondents with primary school education, 7 respondents from junior high school, and 4 high school respondents in the foot soaking therapy group with warm water. Whereas in the classical music therapy group, respondents with primary school education were 7 respondents, junior high school as many as 9 respondents, high school as many as 3 respondents, and college as many as 1 respondent.

Table 4. Analysis of blood pressure before and after given therapy Foot Soak Warm water

Variable	Mean	Mean Diff	P. Value
Pre Sistole Day 1	155,29	0,03	0,56
Post Sistole Day 1	155,26		
Pre diastole Day 1	91,57	0	1
Post diastole Day 1	91,57		
Pre Sistole Day 2	155,26	0,53	0,31
Post Sistole Day 2	154,73		
Pre diastole Day 2	92,10	0,43	0,32
Post diastole Day 2	91,57		
Pre Sistole Day 3	152,10	2,1	0,046
Post Sistole Day 3	150		
Pre diastole Day 3	88,94	2,63	0,025
Post diastole Day 3	86,31		

Based on table 4, the difference in systole value before and after being given warm water foot soak treatment on the first day is 0.03 with a p value of 0.56. The second day, the difference in systole value before and after being given the warm water foot soak treatment was 0.53 with a p value of 0.31. The third day, the difference in systole value before and after being given the warm water foot soak treatment was 2.1 with a p value of 0.046. Because the p value <0.05, it can be concluded that there is an effect of foot bath therapy with warm water on systolic blood pressure on the third day. While the diastole difference value before and after being given warm water foot soak treatment on the first day was 0 with a p value of 1.00. For the second day, the diastole difference value before and after being given the warm water foot soak treatment was

0.43 with a p value of 0.32. For the third day, the diastole difference value before and after being given the warm water foot soak treatment was 2.63 with a p value of 0.025. Because the p value <0.05, it can be concluded that there is an effect of foot bath therapy with warm water on diastolic blood pressure on the third day.

Table 5. Analysis of Blood Pressure Before and After given Classical Music Therapy

Variable	Mean	Mean Diff	P. Value
Pre Sistole Day 1	154		
Post Sistole Day 1	154	0	1
Pre diastole Day 1	92,5		
Post diastole Day 1	92,5	0	1
Pre Sistole Day 2	155		
Post Sistole Day 2	155	0	1
Pre diastole Day 2	92,5		
Post diastole Day 2	92,5	0	1
Pre Sistole Day 3	155		
Post Sistole Day 3	92,5	0,5	0,31
Pre diastole Day 3	154,5		
Post diastole Day 3	91	1,5	0,083

Based on table 5, the difference value of systole before and after being given classical music treatment on the first day is 0 with p value 1. The second day, the systole difference value before and after being given classical music treatment is 0 with p value 1. The third day, the system difference value is obtained. before and after being given classical music treatment, namely 0.5 with a p value of 0.31. Because the p value > 0.05, it can be concluded that there is no effect of classical music therapy on systolic blood pressure. While the diastole difference value before and after being given classical music treatment on the first day is 0 with p value 1. The second day the diastole difference value before and after being given classical music treatment is 0 with p value 1. The third day the diastole difference value before and after being given music treatment classic is 1.5 with a p value of 0.083. Because the p value > 0.05, it can be concluded that there is no effect of classical music therapy on diastolic blood pressure.

Tabel 6 Analysis of Differences in the Effectiveness of Warm Foot Bath Therapy and Classical Music Therapy on Blood Pressure

Variable		N	Mean	P Value
Foot Soak Therapy	Sistole Day 1	20	150	0,036
	Sistole Day 2	20		
	Sistole day 3	20		
Classical Music Therapy	Sistole Day 1	20	154,5	0,036
	Sistole Day 2	20		
	Sistole Day 3	20		
Foot Soak Therapy	Diastole Day 1	20	89,67	0,108
	Diastole Day 2	20		
	Diastole Day 3	20		
Classical Music Therapy	Diastole Day 1	20	92	0,108
	Diastole Day 2	20		
	Diastole Day 3	20		

Based on table 6, the p value systole $< \alpha = (0.036)$ where $\alpha = (0.05)$, it can be concluded that there is a significant difference from warm water foot soak therapy and classical music therapy to reduce systolic blood pressure. While the p-value of diastole $< \alpha = (0.108)$ where $p\text{-value} > \alpha = (0.05)$, it can be concluded that there is no significant difference between warm water foot soak therapy and classical music therapy to reduce diastolic blood pressure.

DISCUSSION

Effect of Foot Soak Therapy with Warm Water on Blood Pressure of Hypertensive Clients

On the third day, the difference in systole value before and after being given warm water foot soak treatment was 2.1 with a p value of 0.046, while the diastole difference value before and after being given warm water foot soak treatment was 2.63 with a p value of 0.025. It can be concluded that foot soaking therapy with warm water affects the blood pressure of hypertensive clients on the third day, where the systolic p value of the third day is $0.046 < \alpha (0.05)$. And the p value of diastole on the third day is $0.025 < \alpha (0.05)$.

Research conducted by Intan Pratika M for 3 days found that after soaking the feet using warm water on the first day, most respondents experienced a decrease of > 6 mmHg with a total of 17 respondents (77%). On the second day of the research, it was found that after soaking the feet using warm water, most of the respondents experienced a decrease of > 6 mmHg with a total of 14 respondents (64%). On the third day of the research, it was found that after soaking the feet using warm water, most of the respondents experienced a decrease of > 6 mmHg with a total of 15 respondents (68%). From the results of statistical tests with paired t test, it was found

that the value of $p = 0.000$ with $\alpha = 0.05$ ($p < \alpha$) then H_0 was rejected and H_a was accepted (Pratika, 2012).

A decrease in blood pressure after being given a foot bath with warm water can occur because warm water with a temperature of $31-37^\circ\text{C}$ causes vasodilation which can open blood flow. The soles of the human foot have nerve points that are associated with other body organs. This is due to the benefits of the warm water foot soaking technique itself which has several effects on blood pressure through warm water media, namely widening the passage of blood vessels and improving blood circulation in the tissue⁸. Relaxes muscles that experience tension resulting in a relaxing effect from stimulation of warm water media. Because the blood vessels are vasodilated, causing blood pressure to decrease. Every organ of the body has a connection with nerve points found on the soles of the feet. The heart, lungs, stomach and liver have separate nerve points on the soles of the feet. Likewise with other body parts⁹.

Physiologically, the body's response to heat causes dilation of blood vessels, decreases blood viscosity, decreases muscle tension, increases tissue metabolism and increases capillary permeability. This warm response is used for therapeutic purposes.

The Effect of Classical Music Therapy on Blood Pressure of Hypertensive Clients

On the third day, the difference in systole value before and after being given classical music treatment was 0.5 with a p value of 0.31, while the diastole difference value before and after being given classical music treatment was 1.5 with p value 0.083 meaning that all p value The first day to the third day $> \alpha = 0.05$ means that there is no significant effect of classical music therapy on blood pressure in clients with hypertension.

This is not in line with the research conducted by Rini Fahriani on the Effect of Classical Music Therapy on Lowering Blood Pressure in the Elderly in the Work Area of the Kabila Community Health Center, Bone Bolango Regency, statistically obtained results with $p = 0.001$ meaning that there is an effect of music therapy on reducing blood pressure in the elderly in the region. the work of Bone Bolango District Health Center¹⁰.

Music that can give calm and peace is music with a slower tempo. Music with a slow tempo can be found in all genres, one of which is classical music. Music has benefits for treating and curing diseases. The internal rhythm of music affects the metabolism of the listener's body for the better. Music has been shown to reduce heart rate, relieve pain, lower blood pressure and reduce anxiety and depression. When music is applied into a therapy and music can improve, restore and maintain physical, mental, emotional, social and spiritual health¹¹.

Many factors cause in this study music therapy does not have a significant effect on blood pressure of hypertensive clients, including the choice of classical music which is less preferred by respondents where most residents of Ijen sub-district are dominated by Madurese tribes who prefer and enjoy louder music, especially dangdut songs. Instead of classical music, Mozart's music is slow and soft. Many also when the therapy was carried out, many respondents did not enjoy classical music played by the researcher and felt bored because they thought that the music must have the voice of a singer not only in an instrumental form such as Mozart music played by the researcher. The boredom that occurred.

Effectiveness of Foot Soak Therapy With Warm Water And Classical Music Therapy

Based on bivariate data using statistical tests, it is known that the p-value is systolic $< \alpha$ (0.036) while the p-value for diastole is $< \alpha$ (0.108) where the p-value is $< \alpha$ (0.05), it can be concluded that there is a significant difference from the warm water foot soak technique. and classical music techniques for lowering blood pressure. Based on the results, the mean warm water foot soak therapy was more effective in reducing blood pressure than classical music therapy.

The results of this study concluded that of the two therapies, warm foot bath therapy was more effective in reducing blood pressure in hypertension than classical music therapy. Warm water foot soak therapy and classical music therapy are both able to lower systolic blood pressure, but the researchers argue that warm foot bath therapy is more effective in reducing blood pressure in patients with hypertension, especially when therapy enters the third day. This is because on the soles of human feet there are nerve points that are associated with other body organs¹².

The results of this study can be useful for nurses or health workers in providing health services, especially for clients with hypertension to reduce blood pressure. Hypertension can be treated pharmacologically and non pharmacologically. Pharmacological treatment usually uses drugs that contain side effects. Pharmacological treatment consists of giving drugs that are diuretics, beta blockers, calcium channel blockers, and vasodilators with respect to the location, mechanism of action and level of adherence. This pharmacological treatment has side effects that vary depending on the length and duration of the drug used. For example, the use of drugs for a long duration can damage kidney function.

Non-pharmacological treatments include quitting smoking, reducing excess alcohol consumption, lowering salt and fat intake, increasing fruit and vegetable consumption, losing excess weight, physical exercise and complementary therapy. One of the complementary

therapies is the foot soak in warm water. Especially for patients who need alternative therapies other than drugs. In this study, foot soak therapy was proven to affect the blood pressure of clients with hypertension¹³.

CONCLUSION AND SUGGESTION

Foot Soak Therapy with warm water is effective against blood pressure reduction in hypertensive clients, while classical music therapy is not effective against blood pressure reduction in hypertensive clients. The results of this study can be further developed with different variables.

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