



## THE EFFECT OF A COMBINATION OF FOOT MASSAGE THERAPY AND DRIED ROSELLE FLOWER TEA ON REDUCING BLOOD PRESSURE IN HYPERTENSION IN SERANG HAMLET, MEKARJAYA VILLAGE, PURWASARI DISTRICT, KARAWANG REGENCY

By

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### ABSTRACT

Hypertension is blood pressure that increases beyond the normal limit, namely above 140 mmHg and/or diastolic blood pressure of 90 mmHg. Hypertension in the elderly aged >50 years if they have hypertension with a systolic value >140 mmHg. Mekarjaya Village has 58% of hypertension cases and is the largest number of PTM cases in the elderly in Mekarjaya Village. This research was carried out in the Serang hamlet, Mekarjaya Village, the working area of the Purwasari Community Health Center. The research was carried out by providing a combination of foot massage therapy and drinking tea brewed with dried rosella flowers. Foot massage therapy and roselle flowers are known to help reduce blood flow because blood flow becomes smooth and roselle has been proven to help reduce the amount of fatty plaque that sticks to blood vessels. The aim of the research was to determine the effect of a combination of foot massage therapy and drinking roselle tea on reducing blood pressure in hypertensive patients. This research method uses a quantitative method with a quasi-experimental pretest-posttest design with control group design. The sample used was 48 people, of which 24 people were in the intervention group and 24 people were in the control group. The analysis used in this research is the Wilcoxon Sign Rank test. The research results showed that there was an effect of a combination of foot massage therapy and drinking tea steeped in dried roselle flowers on changes in blood pressure in elderly hypertensive patients at the Posyandu for the elderly in Serang hamlet, Mekarjaya Village, Purwasari District with a p-value (0.000). Conclusion: The combination intervention of foot massage and roselle flower tea is effective to help reduce blood pressure in patients with hypertension

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## 1. INTRODUCTION

Hypertension is persistent blood pressure where the systolic pressure is above 140 mmHg and the diastolic pressure is above 90 mmHg. Hypertension is the main cause of heart failure and kidney failure. Hypertension can also kill the sufferer suddenly because hypertension often has no symptoms (Fitriyana, 2023).

Hypertension is caused by internal factors and internal factors. Internal factors such as heredity, comorbid diseases, health status and lifestyle. External factors come from the environment, smoking habits, coffee drinking habits, insomnia, obesity, stress, lack of exercise and alcohol consumption. The prevalence of hypertension sufferers worldwide reaches 1.13 billion people (WHO, 2020). This prevalence continues to increase throughout the world. Indonesia has 31.7% of hypertension sufferers, so that almost 1 in 3 people aged 30 years and over suffer from hypertension (Risksedas, 2018).

Many people don't realize they have hypertension because the symptoms often don't lead to serious health problems. If not treated properly, hypertension can cause serious problems. Smoking, obesity, lack of exercise and excessive salt consumption are factors that trigger hypertension (Novelia, 2022).

If hypertension is not treated, it will cause serious problems such as complications from coronary heart disease, diabetes mellitus, kidney failure, blindness and complications from stroke. The role of nurses plays an important role in providing health services and nursing care. Nurses have a role in improving family care capabilities, namely caring for sick family members. Family involvement is really needed, especially those closest to you, especially family members who live in the same house, to monitor the client's hypertension. This will have an impact on minimizing treatment costs and preventing hospitalization if your hypertension worsens or complications from hypertension itself occur. Non-pharmacological nursing interventions that are easy to teach and carried out by clients and family members, such as hypertension exercises and foot massage, will be carried out and do not cause side effects (Pratiwi et al, 2022).

Complementary therapy that can be done as an effort to overcome hypertension is a combination of foot massage therapy and drinking infusion of dried roselle flowers. Foot massage therapy can help improve blood flow because it has a relaxing and vasodilating effect on blood vessels. Stiff muscles in hypertension sufferers will be reduced due to the vasodilation effect where blood vessels widen so that blood flow improves and blood pressure decreases. Infusion of dried roselle flowers has been proven to be effective in helping lower blood pressure in hypertensive patients because roselle flowers contain polysaccharides and flavonoids which can reduce blood viscosity so that blood flow becomes smoother. The vitamin C content in roselle flowers also increases the body's immunity against disease. Anthocyanin substances found in blood vessels can maintain the elasticity of blood vessels. Anthocyanins and proanthocyanidins provide anti-hypertensive effects by inhibiting the formation of ACE II and angiotensin converting enzyme, resulting in a vasodilator effect (Bourqui, 2021).

This research was conducted to implement minimal use of non-medical therapy in nursing interventions using complementary therapies. Complementary therapy that can be used to help overcome hypertension problems in the elderly in Mekarjaya Village is a combination of foot massage therapy and drinking dried roselle flower tea. From many previous studies, it is known that foot massage therapy and roselle flowers are effective in helping to lower blood pressure without causing side effects. Roselle flowers are also easy to find and many Mekarjaya village residents plant them as TOGA (family medicinal plants). Foot massage therapy is also easy to apply and families can do it as treatment for the elderly or family members who have hypertension (Huriah, 2019).

## 2. RESEARCH METHOD

This research design uses a quasi-experimental design using a pretest posttest with control group design. Group A were respondents who received a combination of foot massage therapy intervention and the control group were respondents who were not given the intervention. The population in this study were elderly patients with hypertension with a total of 48 respondents with 24 respondents in each group. The independent variable in this study was a combination of foot massage therapy and roselle flower tea, while the dependent variable was the blood pressure of hypertensive patients. The intervention was carried out for 3 days, where foot massage therapy was carried out in the afternoon from 16.00 to 17.30 WIB and the patient drank an infusion of dried roselle flowers 2 times a day in the morning and evening after eating. This research was conducted in September 2023

## 3. RESULTS AND ANALYSIS

### Univariate Analysis

**Table 1. Univariate Analysis**

Data Demografi	(n)	Frekuensi
Age	57-68 th	48
Education	Elementary-intermediate	40
		83%

	High	8	17%
<b>Work</b>	Not Work	40	83%
	Self-Employed	8	17%

Table 1 describes the number of participants as 24 people in the age range 56-68 years. The majority of seniors' education is primary to secondary education (83%) and the majority of seniors are no longer working (83%).

**Table 2. Norm Test Results**

Variable		Statistics	df	Sig.
<b>Blood Pressure</b>	Pre-Systolic	0,001	48	0,001
	Pre-Diastolic	0,063	48	0,063
	Post- Systolic	0,031	48	0,031
	Post-Diastolic	0,001	48	0,001

Based on table 2, it is known that the test for normality of systolic and diastolic blood pressure before and after in the control and intervention groups was carried out using the *Saphiro Wilk* and obtained the P-value results; 0.001 and 0.031, meaning the data is not normally distributed. For diastolic blood pressure before and after treatment, the p-value was 0.063 and 0.001, so it was known that one data was normally distributed (p-value  $0.063 > 0.05$ ) and the other was not normally distributed (p-value  $0.001 < 0.005$ ). From the results of this data, all the p-values of the normality test are known to have 3 data that are not normally distributed and 1 data that is normally distributed so that the data analysis carried out is a non-parametric test, namely the *Wilcoxon Sign Rank Test*

#### Bivariate Analysis Test

Bivariate analysis was carried out to determine the effect of reducing blood pressure before and after therapy *foot massage* and steeping dried roselle flower tea in elderly people with hypertension in Mekarjaya Village, Purwasari District in Karawang Regency, West Java.

**Tabel 3. Bivariate Analysis**

Variabel	Ranks	Z	p-Value	
Different TD Systolic Pre-Post	Negative Ranks	27	-3,736	0,000
	Positive Ranks	17		
	Ties	4		
	Total	48		
Different TD Diastolic Pre-Post	Negative Ranks	28	-3,511	0,000
	Positive Ranks	10		
	Ties	10		
	Total	48		

Table 3 shows that there is a significant influence between systolic blood pressure before and after treatment from 48 respondents. The results showed a negative rank of 27, meaning a decrease in systolic blood pressure, a positive rank of 17, meaning that there were 17 respondents whose systolic blood pressure had increased and a Ties of 4, meaning pressure. there is no change in the blood. Diastolic blood pressure before and after treatment showed a negative rank of 28, meaning a decrease in diastolic blood pressure, a positive rank of 10, meaning there were 10 respondents whose systolic blood pressure had increased and Ties of 10, meaning there was no change in blood pressure.

The results of systolic blood pressure before and after treatment showed a value of  $Z = -3.736$  with a P-value of  $0.000 < 0.05$ , meaning that  $H_0$  was rejected and  $H_a$  was accepted, meaning that there was a significant influence on the provision of therapy. *foot massage* and drinking dried roselle flower tea for 3 consecutive days on systolic blood pressure in hypertensive patients in the Purwasari Health Center working area.

Diastolic blood pressure results Diastolic blood pressure results before and after treatment showed a value of  $Z = -3.511$  with a P-value of  $0.000 < 0.05$ , meaning that  $H_0$  was rejected and  $H_a$  was accepted, meaning that there was a significant influence on the provision of therapy. *foot massage* and drinking dried roselle flower tea for 3 consecutive days on diastolic blood pressure in hypertensive patients in the Purwasari Health Center working area.

#### 4. DISCUSSION

From the research results, it is known that hypertensive patients are a disease that often appears without symptoms and can pose a risk to patients if not controlled. This risk can include complications from heart disease, stroke and other blood vessel diseases. Treatment for patients with hypertension is by changing lifestyle such as diet,

stopping smoking, not using alcohol and good physical activity such as regular exercise. Non-pharmacological therapy can be taught independently

to clients and families is a complementary nursing therapy, one of which is a combination of foot massage therapy with drinking herbal tea steeped in dried roselle flowers in hot water (Hurairah, 2019). The combination of foot massage was chosen because it is one of the complementary nursing therapies that is easy to do and teach to the elderly and their families. This therapy uses simple movements taken from reflexology massage therapy on nerve points carried out on the soles of the feet and ankles. Foot massage therapy does not cause side effects and does not require expensive costs because it consists of lotion or aromatherapy oil. This foot massage therapy can be done regularly every day or can be done 2-3 times a week for 15-30 minutes in one massage session (Ainun, 2021). When massage is done on the soles and ankles, blood circulation will flow throughout the joints of the feet, relaxing them and making blood flow back to the heart more smoothly. The effects of parasympathetic nerves will provide a relaxing and vasodilation effect so that blood pressure falls. In addition to the combination of foot massage therapy, patients also receive foot reflexology massage therapy and drink tea brewed with dried roselle flowers every day in the morning and evening (Fandizal, 2019).

Roselle flowers have been proven to lower blood pressure because they contain many substances such as polysaccharides and flavonoids which function to improve blood viscosity so that blood flow becomes smoother. Roselle flowers also contain vitamin C which functions to maintain the body's immunity against disease. Roselle also contains anthocyanins which are useful for maintaining the elasticity of blood vessels (anti-hypertension effect) by inhibiting the formation of ACE II and angiotensin converting enzyme resulting in a vasodilator effect (Bourqui, 2021).

The results of this study show that the combination of foot massage therapy and drinking tea steeped in dried roselle flowers has a significant effect on reducing blood pressure in patients with hypertension. Giving foot massage therapy and drinking tea brewed with roselle flowers is done every day. Foot massage therapy can be taught to families to apply to elderly people with hypertension combined with drinking tea steeped in dried roselle flowers. If the client has a history of gastritis, it is recommended that the client drink roselle flower infusion after eating (Fandizal, 2019).

This research is in line with research conducted by Jalayardi (2019) and Bourgeois (2021) where roselle flowers were proven to have a significant effect on reducing blood pressure. Research conducted by Nurul Huda where giving roselle tea plus honey had a significant reducing effect on lowering blood pressure. Research conducted by Bustomi (2020) stated that regularly giving roselle flower tea to elderly people with hypertension has proven effective in helping reduce blood pressure in elderly people with hypertension.

## 5. CONCLUSION

Further research on the combination of foot massage therapy and dried roselle flower tea in the future needs to be carried out in the future. The use of roselle flowers, which are generally easy to find on various islands in Indonesia, means that products can be developed that attract public interest, such as roselle flower tea bags. It is necessary to combine the taste of roselle flowers so that they do not have a sour or too sharp taste, for example combining them with lemon or ginger so that they are more acceptable to the public. Socialization of nursing interventions also needs to be carried out so that the public and the general public know the benefits of a combination of foot massage therapy and roselle flower tea to help lower blood pressure in hypertensive patients.

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