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## **THE EFFECT OF COMPLEMENTARY INTERVENTIONS ON REDUCING BLOOD PRESSURE IN DUAL ROLE - WOMEN SUFFERING FROM HYPERTENSION**

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### **ABSTRACT**

Hypertension is a circulatory system that causes an increase in blood pressure above normal values with an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg. The study was conducted at the Bandarharjo Health Center. The purpose of this study was to determine the effect of complementary interventions on reducing blood pressure in dual role - women suffering from hypertension sufferers. This study was conducted on April 24 - May 10, 2024. This study used quasi-experimental research with a one-group pre-post-test design. The number of samples in this study was 66 respondents with a simple random sampling data collection technique. This study used an observation sheet measuring instrument containing the characteristics of the respondents and blood pressure. The data collection procedure begins with a pre-test by measuring the respondent's blood pressure, then the researcher provides intervention in the form of complementary foot massage and therapy classical music, and lemon aromatherapy in combination. At the end of the study, the researchers conducted a post test by measuring the respondents' blood pressure. Results: The statistical test of this study used the Wilcoxon Test with a significance level ( $<0.05$ ). The results of the statistical test of this study obtained a p-value of 0.0001. Based on the results of the p-value in the post-test, it can be concluded that there is an effect of complementary interventions on reducing blood pressure in dual role - women suffering hypertension.

Keywords: complementary interventions; hypertension; women with the dual role

### **INTRODUCTION**

Dual role - women have two roles, between career and household. According to Hervey & Shaw, women's dual role include two things, namely work, and care. Work is defined as the role of women in a job, such as factories and offices (Panani, 2021). Conflicts that often arise in dual role - women are due to pressures that come from family and work, one of which is workload which tends to cause depression, increased physical complaints, and low energy levels, resulting in increased stress which can cause several diseases, one of which is hypertension (Martha & Prahasta, 2023). A community is a social group or community group that lives in the same place or location with the same government and communicates or interacts with each other (Harefa, 2019). Community nursing is a nursing service aimed at the community through an approach to high-risk groups to achieve optimal health levels by preventing disease and improving health. Community nursing services are aimed at the entire community, families, and groups of infants, toddlers, the elderly, and pregnant women (Susanty, S., 2023).

Dual role is two roles carried out by one person in carrying out a task that has indeed become something that he/she does (work) and also one of the roles has become a nature that has indeed been attached to him/her and his/her responsibility as a mother who has children (housewife) in a family. In a conventional family, the husband is responsible for earning a living and the wife takes care of the household. (Rizqi & Santoso, 2022) . But now, with the growing opportunities for married women to work, family patterns are changing and what is known as career dualism is emerging. Society recognizes various roles, including the productive role and reproductive role. The productive role is generating income to meet needs. The reproductive roles are ensuring family and human survival through activities like childcare, cooking, and giving birth (Samsidar, 2019).

WHO (World Health Organization) in 2021, an estimated 1.28 billion adults aged 30-79 years worldwide suffer from hypertension, most of whom are in low-income countries. WHO estimates that 46% of adults with hypertension are unaware that they have hypertension and about 1 in 5 adults (21%) with hypertension can control it ( World Health Organization, 2023). In Indonesia, the 2018 Basic Health Research (Riskesdas) showed an increase in the prevalence of hypertension in Indonesia reaching 34.1% (MINISTRY OF HEALTH OF THE REPUBLIC OF INDONESIA, 2021). The prevalence of the population in Central Java Province with hypertension is 37.57%. Based on Basic Health Research (Riskesdas) data in 2018, the prevalence of hypertension in Semarang was 37% of the population aged 15 years and over, with the prevalence of hypertension in women 56% greater than men 44% (Semarang City Health Office, 2022). The results of a preliminary study obtained data on the number of women with hypertension in February 2024 at the Bandarharjo Health Center of 199 people. Where 10 dual role - women were subjected to a preliminary study using an observation sheet instrument, the results were obtained from 10 samples taken, 10% had grade 1 hypertension, 30% had grade 2 hypertension, 20% had prehypertension, and 40% had normal MAP values.

Hypertension is a blood circulation system that causes an increase in blood pressure above normal values with an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg. Systolic pressure is the pressure when the heart pumps blood throughout the body, diastolic pressure is the pressure when the heart rests before pumping blood back. Hypertension often does not cause any indications so if not treated quickly and appropriately it will cause complications, one of which is stroke, heart failure, and kidney disease (Candra et al., 2022). Hypertension needs special attention and comprehensive treatment from preventive, promotive, curative, and rehabilitative efforts (Arifah et al., 2023). The role of community nurses is to provide health education, counseling, and nursing interventions through home visits to hypertension sufferers. Nursing interventions that can be provided include teaching the disease process, decision-making support, behavior modification, environmental management, and health screening (Suhari et al., 2023). One of the treatments that can be given by nurses is a comprehensive treatment that functions to lower blood pressure, namely conventional therapy and non-conventional therapy. Conventional therapy is therapy with drugs, and non-conventional therapy is complementary therapy, namely lemon aromatherapy, classical music therapy, and foot massage. (Hijriani & Chairani, 2023) .

Foot massage is a safe complementary therapy that has the effect of increasing blood circulation and reducing pain and aches, relaxing muscles, and providing comfort (Zulkharisma et al., 2023). The purpose of foot massage is to lower blood pressure, reduce pain, stabilize the heart's pumping function, and reduce the shrinkage of the walls of fine arteries so that pressure on the walls of blood vessels is reduced and blood flow is smooth so that blood pressure decreases (Patria & Haryani, 2019). Besides foot massage, non-pharmacological management of lemon aromatherapy can also be given to people with hypertension. Lemon aromatherapy can lower systolic blood pressure in people with hypertension because aromatherapy works through the circulatory system and the olfactory nervous system. When inhaled through the nose, aromatherapy molecules enter the nasal cavity membrane and affect the olfactory nervous system. The olfactory nerves transmit impulses to the brain so that they can stimulate the release of endorphins which are useful for regulating mood (Vikantara et al., 2023). If aromatherapy is inhaled, it will provide a calm, relaxed sensation so that it can reduce pain, heart rate and breathing patterns become calmer and can control blood pressure (Abbas & Husna, 2021).

Non-pharmacological management uses complementary therapies other than aromatherapy that can be done in classical music therapy. Classical music therapy is a therapy that aims to improve physical and mental quality through sound stimulation consisting of rhythm, melody, harmony, timbre, style, and form in such a way that music is created that is beneficial for physical and psychological health (Fitriana Vera

et al., 2023). Music therapy can provide positive effects, and the influence of music as an entertaining effect, learning effect, and enriching mind effect. Music can affect the listener's heart rate so that it creates calm and reduces pain caused by music with a soft rhythm that is heard through the ear directly into the brain and is immediately processed so that it produces a very good effect on a person's health. Sounds with a medium frequency of 750 - 3000 Hertz can control blood pressure in people with hypertension (Satria & Hartutik, 2023). Based on this background, it can be concluded that the problem of this research is the Effect of Complementary Interventions on Reducing Blood Pressure in Dual role Women Suffering from Hypertension. The aim of this research is to find out whether there is an effect of providing complementary interventions on women with dual roles who have hypertension.

## METHOD

The method used in this study is a quantitative research method with a quasi-experimental research design. The type of sampling used in this study is probability sampling with a sampling technique of Simple Random Sampling of 66 respondents. The research location was at the Bandarharjo Health Center in April-May 2024 which had received an ethical clearance letter from STIKES Telogorejo with No. 034/IV/KE/STIKES/2024 on April 1, 2024. Data collection using respondent characteristic sheets includes data on age, education, occupation, and blood pressure reduction after and before the intervention was given. Data measurement using a research instrument containing respondent characteristics and a blood pressure observation sheet. The instrument has been tested by experts and is suitable for use as material in this study. The data analysis conducted includes univariate analysis and bivariate analysis. The univariate analysis includes respondent characteristic data such as age, occupation, education, the pre-test before complementary intervention, and post-test after complementary intervention were measured based on observation sheets. Bivariate analysis using the Wilcoxon test to determine the effect of complementary intervention on reducing blood pressure in dual role - women suffering from hypertension.

## RESULT

Table 1  
Frequency Distribution of Respondents Based on Age, Education, Occupation in Dual role - women Suffering from Hypertension (n=66)

Respondent Characteristics	f	%
Age		
Late Adolescence (17 – 25 years )	2	3.0
Middle Adult (26 – 35 years old )	5	7.6
Late Adulthood (36 – 45 years old )	10	15.1
Early Elderly (46 – 55 years old )	18	27.3
Late Elderly (56 – 65 years )	31	47
Education		
No school	12	18.2
SD	16	24.2
Junior High School	14	21.2
Senior High School	17	25.8
College	7	10.6
Work		
Shift Work	9	13.6
Non-Shift Workers	57	86.4

Based on table 1, the characteristics above can be seen that from a total of 66 respondents with hypertension at the Bandarharjo Health Center, the majority of respondents are in the late elderly age (56-65 years), namely 31 people (47%). Based on the grouping of education levels, the majority are high

school, namely 17 respondents (25.8 % ). Based on the work, the results showed that the majority of the work showed that the majority of respondents did not work shifts, namely 57 respondents (86.4 % ).

Table 2.

Frequency Distribution of Respondents Based on Blood Pressure Before Complementary Interventions in Dual role - women Suffering from Hypertension (n=66)

Variables	<i>Pre Test</i>		<i>Post Test</i>	
	f	%	f	%
Normal (70 - 99 mmHg)			12	18.2
Pre hypertension (100 - 105 mmHg)	15	22.7	24	36.4
Hypertension Grade 1 (106 - 119 mmHg)	35	53.1	28	42.4
Hypertension Grade 2 (120 - 132 mmHg)	16	24.2	2	3.0

Based on Table 2, the characteristics of blood pressure reduction before complementary intervention were given to dual role - women with hypertension at Bandarharjo Health Center, the majority of the MAP results were grade 1 hypertension, with as many as 35 respondents (53.0%). Based on the decrease in blood pressure after complementary intervention, the majority of the MAP results were grade 1 hypertension, with as many as 28 respondents (42.4 % ).

Table 3

Frequency distribution of respondents based on blood pressure after complementary intervention was given to dual role - women suffering from hypertension (n=66)

Complaint Level	<i>Negative Ranks</i>	<i>Positive Ranks</i>	Ties	<i>Mean Rank</i>	P ( <i>P-Value</i> )
<i>Pre-Test Post-Test</i>	43	0	23	22.00	0.0001

Based on Table 3, the results of the statistical test using the Wilcoxon test can be seen, which shows a p-value of 0.0001 ( $<0.05$ ), which can be interpreted that  $H_a$  is accepted, meaning that there is a significant influence between complementary interventions on reducing blood pressure before and after the intervention is given.

## DISCUSSION

Based on the research results above, it was found that the majority of respondents were dominated by the late elderly category. In general, the age of a person, the greater the possibility of suffering from hypertension, this can also be caused by changes in the structure of large blood vessels and also caused by decreased endurance. This is in line with the results of research conducted by (Maulidina, 2019) which shows that there is a significant relationship between age and the incidence of hypertension because age  $> 60$  years increases the occurrence of hypertension due to natural changes in the body that affect the elasticity of blood vessels decreases and decreased endurance, the increasing age due to the aging process that makes a person susceptible to disease. In this study, dual role - women were more in the late elderly age because at that age dual role - women have pressures from the family which causes the age range to be more dominant to work. Therefore, the age group of dual role- women, the majority of whom are aged 56-65 years, is an age group that has pressure from family and economic demands. Education level affects a person's ability and knowledge to implement healthy living behaviors, especially hypertension. The higher the level of education, the higher a person's ability to maintain a healthy lifestyle, highly educated respondents will easily absorb information and will have better knowledge than respondents with low education. Although at the high school level, it shows the opposite. However, urban residents who tend to have higher levels of education are more at risk of suffering from hypertension (Taiso et al., 2021). The results of the 2018 Riskesdas in the Health Research and Development Agency (2018) stated that hypertension tends to be high in low education and decreases according to increasing education. The

results of this study show that the characteristics are based on the education of respondents in dual role - women, namely having an average high school education level of 17 respondents (25.8 %).

Based on the results obtained, the work factor is related to blood pressure. The majority of respondents' jobs are non-shift workers who have a workload that can cause a high risk of hypertension. The results of this study indicate that the characteristics based on the work of respondents in dual role - women, namely the majority of non-shift workers are 57 respondents (86.4 %). Based on the results of the study (Neng Yulia Maudi et al., 2021) regarding physical activity, it states that the type of work can trigger the onset of diseases, one of which is hypertension (Makawekes et al., 2020) which states that lack of physical activity increases the risk of suffering from hypertension because it increases the risk of being overweight. People who do less physical activity also tend to have a higher heart rate so their heart muscles have to work harder with each contraction. The harder and more often the heart muscle has to pump, the greater the pressure placed on the arteries. Before the complementary intervention was given, most respondents experienced grade 1 hypertension with an average MAP value of 113 mmHg for 35 respondents (53%). Based on the results of interviews conducted by researchers, the most common complaints were dizziness and insomnia. Complaints often arise in certain conditions such as thinking too much, stress, lack of rest, excessive activity, and consuming unhealthy foods such as junk food, oily foods, and foods high in salt. This is in line with what was done by (Herdiani, 2019) which found that the majority of respondents before being given complementary intervention were in the grade 1 hypertension category, namely 27 people with a percentage (57.4%).

After being given complementary interventions, the majority of the hypertension category was grade 1, with as many as 28 respondents (42.4 %) with an average MAP value of 105 mmHg. The use of complementary interventions is considered effective in lowering blood pressure. Complementary interventions such as acupuncture therapy, meditation, yoga, foot massage, classical music, bending and hypnosis, SEFT therapy, progressive muscle relaxation, reflexology, dance movement therapy, hydrotherapy, acupressure therapy, show significant results in reducing blood pressure in hypertensive patients (Sari et al., 2022). This is in line with the research conducted (Herdiani, 2019) which found that after being given complementary intervention, the majority of people with grade 1 hypertension were 14 people with a percentage of (29.79%). Based on the results of the Wilcoxon test on the two variables that have been carried out by the researcher, it was found that there were 43 respondents who experienced a decrease in blood pressure. With this p-value = 0.0001, the p-value <0.05 means that there is a significant effect between the provision of complementary interventions and decreased blood pressure in dual role - women suffering from hypertension at the Bandarharjo Health Center. This is in line with the research of Puspitasari et al., (2024) which states that foot massage is effective in reducing blood pressure. This foot massage therapy will provide stimulation when all energy pathways are open and the flow of energy is no longer blocked by muscle tension, so that it can smooth the flow of blood and body fluids in the parts of the body that are related to the nerve points of the feet that are massaged and provide a relaxing effect on the body, thus helping sufferers not to depend on drugs and complications can be minimized. This study is also in line with the research of Prasetyo & Burhanto, (2021) which states that there is an effect of classical music therapy intervention on blood pressure stability in people with hypertension. This study is also in line with the research. This is following Kartika & Setiawati (2022), which showed statistical differences in blood pressure, both systolic and diastolic, pre-post administration of lemon aromatherapy.

Complementary interventions used in this study were foot massage, classical music, and lemon aromatherapy. Complementary interventions are interventions given for alternative interventions. One of the complementary interventions that can be done to lower blood pressure in hypertension sufferers is foot massage. It aims to lower blood pressure, reduce the narrowing of the walls of fine arteries, and

reduce heart activity when pumping so that pressure on the walls of blood vessels is reduced and blood flow becomes regular. It has an effect on lowering blood pressure (Dubey, 2021), the next intervention that can be done in classical music therapy where the aim is to improve or improve a physical, emotional, cognitive, and social condition (Manurung et al., 2020), and lemon aromatherapy, the aim of giving lemon aromatherapy is to lower systolic blood pressure in people with hypertension, because the content of bioflavonoids and potassium as antioxidants and strengthen and widen the inner lining of blood vessels and can control high blood pressure (Puspitasari et al., 2022) Complementary interventions of foot massage, classical music therapy, and lemon aromatherapy have benefits, namely that foot massage therapy can improve blood flow, reduce norepinephrine levels, reduce cortisol hormone levels, and reduce muscle tension, so that it can reduce stress which indirectly lowers blood pressure (Gustini et al., 2021). According to Pratama et al., (2023) believe that listening to classical music has benefits that can reduce anxiety and stress, relax the body, and lower blood pressure and heart rate. A calm body state causes the parasympathetic nervous system's heartbeat to slow down. It affects the decrease in cardiac output and reduces the frequency of blood vessel wall pressure. And Silalahi et al., (2020) also explained the benefits of lemon aromatherapy inhaled for 5 minutes will make the body relax and calm so that there is a decrease in heart function and blood pressure. Likewise, Saputra et al., (2024) also explained that the aromatic molecules of lemon can stimulate nerves and guide the brain to always think positively so that it can relieve stress, anxiety, and nervousness, and can create a happy mood.

The results of the study showed that there was a significant influence between the provision of intervention complementary to lowering blood pressure in dual role - women of hypertension sufferers at the Bandarharjo Health Center. This is in line with research (Gustini et al., 2021) Foot massage therapy can improve blood flow, reduce norepinephrine levels, reduce cortisol hormone levels, and reduce muscle tension, so that it can reduce stress which indirectly lowers blood pressure. The results of this study are also in line with the research of Halida & Sartika, (2023) after being given classical music therapy intervention, patients experienced a decrease to mild to moderate hypertension. Then, it is by (Kristiyan, 2024) which shows that there is a decrease in blood pressure after being given lemon aromatherapy from an average systolic of 156.67 mmHg to 150 mmHg and an average diastolic of 95 to 90.67 mmHg.

## CONCLUSIONS

Based on statistical tests using the Wilcoxon Test, a p-value of 0.0001 was obtained, so it can be concluded that there is an effect of complementary interventions on reducing blood pressure in dual role - women suffering from hypertension.

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