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The Effect of Combination Therapy of Al-Qur'an Recitation and Progressive Muscle Relaxation on Reducing Blood Pressure in Women of Childbearing Age with Hypertension at Metro Health Center

Pengaruh Terapi Kombinasi Bacaan Al-Qur'an dan Relaksasi Otot Progresif terhadap Penurunan Tekanan Darah pada Wanita Usia Subur dengan Hipertensi di Puskesmas Metro

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Abstract

Introduction: Hypertension is a public health problem both in terms of Global and National. Murottal therapy works on the brain, where when driven by external stimuli (murottal Al-Qur'an), the brain will produce a chemical called neuropeptide. This molecule will hook into their receptors in the body and will provide feedback in the form of pleasure or comfort. **Objective**: The researcher's objective was to determine the effect of combination therapy of Al-Qur'an recitation and progressive muscle relaxation on reducing blood pressure in women of childbearing age with hypertension. **Method**: This study is an experimental study. This type of research is quantitative, using a quasi-experimental design with a pretest posttest control group design approach. The population were all women of childbearing age with mild and moderate hypertension. A sample of 42 women of childbearing age in the intervention group of 21 people and the control group of 21 people who were recorded as having checked their blood pressure at the Metro Metro Health Center, Metro City Center in 2020. **Results**: The results of the Mannwitney test obtained a systolic p-value of the intervention and control groups of 0.001 < 0.05. The diastolic p-value of the intervention and control groups was 0.001 < 0.05. The difference in the decrease in systolic blood pressure in the intervention and control groups was 8.38 mmHg, the decrease in diastole was 4.29 mmHg. **Conclusion**: The conclusion of this study is that there is an effect of combination therapy of Al-Qur'an recitation and progressive muscle relaxation on reducing blood pressure in women of childbearing age with hypertension.

Kata Kunci:
Terapi Kombinasi Bacaan Al-Qur'an, Relaksasi Otot Penurunan Tekanan Darah

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Abstrak

Pendahuluan: merupakan masalah kesehatan masyarakat baik secara global maupun nasional. Terapi murotal bekerja pada otak, yang mana ketika digerakkan oleh rangsangan dari luar (murotal Al-Qur'an), otak akan menghasilkan zat kimia yang disebut neuropeptida. Molekul-molekul tersebut akan menempel pada reseptornya di dalam tubuh dan akan memberikan umpan balik berupa rasa senang atau nyaman. **Tujuan**: untuk mengetahui pengaruh terapi kombinasi murottal Al-Qur'an dan relaksasi otot progresif terhadap penurunan tekanan darah pada wanita usia subur dengan hipertensi. **Metode**: Desain penelitian eksperimen. Jenis penelitian kuantitatif, menggunakan rancangan quasi eksperimen dengan pendekatan pretest posttest control group design, dan kelompok kontrol (pre dan post test). Populasi seluruh wanita usia subur dengan hipertensi ringan dan sedang. Sampel penelitian ini adalah wanita usia subur pada kelompok intervensi sebanyak 21 orang dan kelompok kontrol sebanyak 21 orang yang tercatat memeriksakan tekanan darahnya di Puskesmas Metro Jaya Tahun 2020 sebanyak 42 orang. **Hasil**: Hasil uji Mannwitney didapatkan nilai p sistolik kelompok intervensi dan kontrol sebesar 0,001 < 0,05. Nilai p diastolik kelompok intervensi dan kontrol sebesar 0,001 < 0,05. Selisih penurunan tekanan darah sistolik kelompok intervensi dan kontrol sebesar 8,38 mmHg, penurunan diastol sebesar 4,29 mmHg. **Simpulan**: Kesimpulan dari penelitian ini adalah ada pengaruh terapi kombinasi murottal Al-Qur'an dan relaksasi otot progresif terhadap penurunan tekanan darah pada wanita usia subur yang mengalami hipertensi.

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Introduction

Hypertension is a global and national public health problem,around 1.13 billion people in the world have hypertension, meaning 1 in 3 people in the world are diagnosed with hypertension. The number of people with hypertension continues to increase every year, it is estimated that in 2025 there will be 1.5 billion people with hypertension, and it is estimated that every year 9.4 million people die from hypertension and its complications (WHO in the Indonesian Ministry of Health, 2019). PThe highest prevalence of hypertension in the world is in Africa at 27% of the total population. Southeast Asia is in the 3rd highest position with a prevalence of 25%(Ministry of Health of the Republic of Indonesia, 2019).

The number of hypertension sufferers treated by health workers is only 36.8% while 63.25% of hypertension in Indonesia is not diagnosed by health workers. Untreated hypertension can cause 10-15% of hypertension sufferers to die (Black & Hawks, 2014), and 35% of all cardiovascular deaths, 50% stroke deaths, 25% coronary heart disease deaths, 50% congestive heart disease, 25% premature deaths (young death) (Setiati, 2015).

Hypertension sufferers are generally aged ≥ 40 years, but currently hypertension can also occur in fertile age (15-49) years with a percentage of ±28.2% of the total prevalence of hypertension in Indonesia.The prevalence of hypertension based on gender is 28.7% for men and 30.9% for women, so women are more at risk of experiencing hypertension (Indonesian Ministry of Health, 2017).

The occurrence of hypertension in Women of Childbearing Age (WUS) can have an impact during pregnancy, gestational hypertension 10%, Pre-Eclampsia (PE) 3-10%, Eclampsia (E) 24% (Manik, et al, 2017), based on these data, hypertension before pregnancy can affect the occurrence of pre-eclampsia and eclampsia. The main cause of maternal death is high blood pressure during pregnancy (PE and E)(Achadi, 2019). Hypertension is the main cause of maternal death, amounting to 33.07% (Ministry of Health of the Republic of Indonesia, 2019).

The incidence of hypertension according to the Basic Health Research (Riskesdas) in 2007, 2013 and 2018 fluctuated. Hypertension in 2007 was 31.7% (Ministry of Health of the Republic of Indonesia, 2008). In 2013 it decreased to 25.8% (Ministry of Health of the Republic of Indonesia, 2013). In 2018 it increased to 34.1% (Ministry of Health of the Republic of Indonesia, 2018).

The prevalence of hypertension in Metro City in 2017 in women was 17.86%, in 2018 the number of women suffering from hypertension in the central Metro district was 23.57%, in 2019 166.3%(Metro City Health Office, 2020). The incidence of hypertension at the Metro Health Center increased from 2017 to 2019, and the incidence of hypertension in the Metro Central Health Center area was the second highest of all Health Centers in Metro City.

Hypertension in women of childbearing age will accelerate the emergence of cardiovascular disease complications (such as stroke, heart attack, heart failure and chronic kidney damage) and can accelerate the decline in a person's cognitive function. The impact of hypertension in women of childbearing age is related to pregnancy problems. Women of childbearing age who experience chronic hypertension before pregnancy are at risk of causing preeclampsia - eclampsia and bleeding. The number of preeclampsia in Indonesia is 3.4% -8.5%. Pre-eclampsia can lead to maternal death.

Pharmacological therapy takes a long time and has side effects on the body, can be expensive, and a long time can increase boredom resulting in incompliance with therapy, while non-pharmacological therapy has a treatment principle of changing lifestyle consisting of stopping smoking habits, losing excess weight, and increasing consumption of fruits and vegetables and reducing fat intake, as well as lifestyle modification, fluid restriction, relaxation techniques and additional K+ ions can normalize blood pressure in clients with hypertension (Black & Hawk 2014).

Hypertension sufferers are susceptible to psychological problems, including stress. An individual who feels unable to face all the pressures in life will experience stress, stress can cause hypertension. Relaxation is one way to reduce stress in essential hypertension sufferers.

Previously conducted research, research by Irmachatshalihah & Armiyati (2019) on the effect of murottal intervention on reducing blood pressure, the average blood pressure value before and

after murottal intervention was given decreased systolic by 24 mmHg, and diastolic 23.15 mmHg with P-value = 0.000 <0.05. Research by Damanik & Ziraluo (2018) with the title the effect of progressive muscle relaxation techniques on reducing blood pressure in hypertensive patients, the average blood pressure value before and after the intervention was given decreased systolic by 5 mmHg, and diastolic 2 mmHg with p value = 0.000 <p value, the average diastolic value after was 94.17 and p value = 0.000 <p value.Research by Fernalia et al. (2020) entitled the effect of murottal therapy of the Al-Kahfi letter on reducing blood pressure in the elderly with hypertension at the Tresna Werdha Pagar Dewa social home in Bengkulu City, obtained an average decrease in systolic blood pressure of 7.41 mmHg and diastolic 4.08 mmHg. The p value is 0.000 <0.05 for systolic pressure, 0.002 <0.05 for diastolic blood pressure.Susilawati's research (2019) entitled the effect of Al-Qur'an murottal therapy, Surah Ar-Rahman on reducing blood pressure in elderly people with hypertension at PSTW Budi Luhur, Jambi City, the average blood pressure value of respondents decreased, systolic by 10.5 mmHg, and diastolic by 6.00 mmHg, with a p-value of 0.000 <α(0.05) and the t-test result on diastolic blood pressure was 0.000 <α(0.05).

The weaknesses of the study are the absence of a control group as a comparison of the final results of the study. The absence of a combination of complementary therapy with standard hypertension drugs.The written studies used quasi-experimental and pre-experimental with one group post-test design, while for this study, a quasi-experimental with pre-test and post-test design group will be used. The studies described above have also not combined pharmacology and non-pharmacology, especially complementary ones. For the target, existing studies are still rare in researching women of childbearing age. The research conducted is to obtain updated knowledge to be more effective in lowering blood pressure in women of childbearing age and also to complement the shortcomings of previous studies that still rarely use control groups. Therefore, researchers are interested in conducting research with the title "the effect of combination therapy of Al-Qur'an murottal and progressive muscle relaxation on blood pressure in women of childbearing age".

Method

This research is a quantitative research with an experimental research design with a pretest posttest control group design, a simple random sampling technique by drawing lots. This research was conducted in the working area of the Metro Health Center in March to April. The population of this study was 123, with a sample size of 42 people.

Data collection was conducted using questionnaires and observations. The variables measured included blood pressure of women of childbearing age with hypertension (dependent variable) and combination therapy of Al-Qur'an recitation and progressive muscle relaxation (independent variable). The measuring instruments used were aneroid tensiometer and questionnaire with their respective measurement results.

The research data were analyzed univariately and bivariately. Bivariate analysis was conducted to determine the effect of combination therapy of Al-Qur'an murottal and progressive muscle relaxation on decreasing blood pressure using the Mannwitney test.

Results

The dominant age of respondents was 39-49 years old totaling 76.2%. The dominant education was high school totaling 57.1% of the intervention group and 66.6% of the control group. The dominant occupation was housewife totaling 76.2% in the intervention group and 71.4% in the control group.

Table 1.
Description of research subjects

Characteristics Respondents	Intervention Group N=21	Intervention Group %=100%	Control Group N=21	Control Group %=100%
Age				
15 - 27 years	2	9.5	2	9.5
28 – 38 years	3	14.3	3	14.3
39 – 49 years	16	76.2	16	76.2
Education				
SD	1	4.8	1	4.8
JUNIOR HIGH SCHOOL	6	28.6	5	23.8
High School	12	57.1	14	66.6
D3/BACHELOR	2	9.5	1	4.8
Work				
Trader	4	19	6	28.6
housewife	16	76.2	15	71.4
Laborer	1	4.8	0	0

Univariate Analysis Results

Table 2.
The average blood pressure of women of childbearing age with hypertension before and after being given a combination of Al-Quran recitation therapy and progressive muscle relaxation**.**

Group	Average TD	Mean Before (mmHg)	Mean After (mmHg)	Mean Decrease (mmHg)
Intervention Group	Systolic	153.1	137.38	15.72
	Diastolic	94.29	83.57	10.72

The intervention group obtained an average decrease in systolic blood pressure after treatment of 15.72 mmHg, and an average decrease in diastolic blood pressure of 10.72 mmHg. by continuing to consume standard hypertension medication and being given a combination of Al-Qur'an murottal therapy and performing progressive muscle relaxation with a decrease in high blood pressure obtained after 10 days of treatment.

Table 3.
Averageblood pressure of women of childbearing age with hypertension before and aftergiven a combination of Al-Quran recitation therapy and progressive muscle relaxation

Group	Average TD	Mean Before (mmHg)	Mean After (mmHg)	Mean Decrease (mmHg)
Control group	Systolic	144.76	137.62	7.14
	Diastolic	93.33	86.90	6.43

In the control group before and after consuming standard hypertension medication, an average decrease in systolic blood pressure of 7.14 mmHg and an average decrease in diastolic blood pressure of 6.43 mmHg was obtained.

Bivariate Analysis

The research results were analyzed using normality tests in the intervention group and control group using Shapiro-Wilk.

Table 4.
Normality Test

Class	Shapiro Wilk		
	Statistics	Df	Significance
intervention systolic gap	.871	21	.010
intervention diastolic difference	.593	21	.001
control systolic difference	.633	21	.001
control diastolic difference	.633	21	.001

Table 5.
Blood pressure reduction in the intervention group and control group in women of childbearing age with hypertension

Group	Mean Decrease in TD + SD	95% CI Lower-Upper	*P-value*
Systolic blood pressure			
Intervention	15.71±4.27	13.77-17.66	0.001
Control	7.14±2.54	5.99-8.30	
Diastolic blood pressure			
Intervention	10.71±2.87	9.41-12.02	0.001
Control	6.43±2.31	5.38-7.48	

Results Mannwitney test obtained p-value systolic intervention group 0.003 <0.05. P-value diastolic intervention group 0.001 <0.05. P-value systolic control group 0.001 <0.05. P-value diastolic control group 0.001 <0.05, so it is concluded that there is an effect of combination therapy of Al-Qur'an murottal and progressive muscle relaxation on reducing blood pressure in women of childbearing age with hypertension at Metro Health Center.

Discussion

The average blood pressure of women of childbearing age with hypertension before and after the combined therapy intervention of Al-Quran recitation and progressive muscle relaxation.

The average blood pressure before the intervention was 153.1 mmHg and 94.29 mmHg. The average blood pressure after 10 days of combined therapy intervention of Al-Qur'an recitation and progressive muscle relaxation was 137.38 mmHg and 83.57 mmHg.

Blood pressure in hypertension sufferers can not only be reduced with pharmacological therapy alone, but also with non-pharmacological therapy, including a combination of Al-Quran recitation therapy and progressive muscle relaxation.The effect of listening to the recitation of the verses of the Qur'an is in the form of changes in electrical currents in the muscles, blood circulation, heart rate, and blood levels in the skin. These changes indicate relaxation or a decrease in the tension of the reflective nerves which results in the loosening of the arteries accompanied by a decrease in the frequency of the heartbeat. Murottal therapy works on the brain, when driven by external stimuli (murottal Al-Qur'an), the brain will produce a chemical called neuropeptide. This molecule will hook into their receptors in the body and will provide feedback in the form of pleasure or comfort.

Progressive muscle relaxation can also stimulate the emergence of chemicals similar to beta blockers in the peripheral nerves that can cover the sympathetic nerve nodes useful for reducing tension and lowering blood pressure (Tyani & Utomo, 2015). The mechanism of progressive muscle relaxation can stimulate the parasympathetic nervous system, namely the raphe nuclei located under the pons and medulla so that there will be a decrease in body metabolism, pulse rate, systolic and diastolic blood pressure decreases(Princess, 2017).

Progressive muscle relaxation is used to reduce or eliminate tension. It can provide a sense of comfort to combat stress, anxiety, and tension. According toJacobson tension is related to the shrinking of muscle fibers, while the opposite of tension is the absence of muscle contraction. He found that by tensing and relaxing several muscle groups, and distinguishing between the sensations of tension and relaxation, a person can eliminate muscle contraction and experience relaxation (Soewondo, et al. 2016).

The average blood pressure before and after intervention in the study by Irmachatshalihah and Armiyati (2019) was, before the intervention 153.50 mmHg and 106.95 mmHg, after the intervention 129.50 mmHg and 83.80 mmHg. The average blood pressure before and after intervention in the study by Damanik & Ziraluo, before the intervention160.61 mmHg and 96.22 mmHg, after intervention 156.57 mmHg and 94.12 mmHg.

Average blood pressure of women of childbearing age with hypertension before and after being given standard hypertension medication.

This study shows that the average blood pressure in the control group before and after consuming standard hypertension medication (amlodipine) was 144.76 mmHg and 93.33 mmHg, the average blood pressure value after consuming standard medication was 137.62 mmHg systolic and 86.90 mmHg diastolic..

Blood pressure can decrease if given antihypertensive drugs, one of which is Amlodipine, which is classified as a Calcium Channel Blocker (CCB) or calcium channel blocker used to slow the rate of calcium passing through the heart muscle and entering the walls of blood vessels, so that blood vessels can relax and make blood flow smoothly (Sari, 2017).

The results of this study were also strengthened by research by Baharuddin (2011),A total of 102 hypertensive patients who received Amlodipine treatment with an average systolic blood pressure before treatment of 166.08 mmHg, after 10 days of treatment decreased to 145.29 mmHg and after 30 days of treatment decreased to 133.14 mmHg. While the diastolic blood pressure before treatment averaged 95.69 mmHg, after 10 days of treatment decreased to 86.86 mmHg and after 30 days of treatment decreased to 79.31 mmHg.

Influence combination therapy of Al-Quran recitation and progressive muscle relaxation therapy in WUS with hypertension before and after intervention

Test results using Mannwitneyobtain a p-value of 0.001 <0.05 on systolic blood pressure, then Ha is accepted and Ho is rejected, which means there is an effect of decreasing systolic blood pressure after the intervention. Diastolic blood pressure obtains 0.001 <0.05, meaning Ho is rejected and Hα is accepted, meaning there is a difference in the average blood pressure or there is an effect of listening to the Al-Qur'an murottal and doing progressive muscle relaxation on decreasing diastolic blood pressure in WUS with hypertension in the Metro Health Center work area.

The difference in the decrease in blood pressure in the treatment group and the control group, the difference in systolic blood pressure between the intervention and control groups was 15.72 – 7.34 = 8.38 mmHg, the difference in diastolic blood pressure between the intervention and control groups was 10.72 – 6.43 = 4.29 mmHg, which means that the decrease in blood pressure in the intervention group was greater than in the control group.

Positive perception obtained from murottal will stimulate the hypothalamus to release endorphin hormones. This hormone will make a person feel happy. Furthermore, the amygdala (which helps coordinate responses to things in the environment that trigger emotional responses) will stimulate the activation and control of the autonomic nerves consisting of the parasympathetic nerves that function to innervate the heart and slow the heart rate, while the sympathetic nerves work the opposite. Controlled autonomic nerve stimulation will cause the secretion of epinephrine and norepinephrine by the adrenal medulla. Control of the hormones epinephrine and norepinephrine will inhibit the formation of angiotensin (a hormone that can cause narrowing of blood vessels so that it can cause vasoconstriction) which can then lower blood pressure (vasodilation occurs). Murottal Al-Qur'an provides positive energy, including from the psychological side, which can affect the body's chemical system, blood pressure in response to internal and external environmental conditions, which are considered to be the cause of health problems in a person. Murottal Al-Qur'an provides positive energy that stimulates the hearing organs and the limbic system (functions to control emotions). The hypothalamus stimulates the release of brain waves (alpha). These brain waves (alpha) cause the release of neurotransmitters serotonin and endorphi. Both will stimulate these chemicals of the parasympathetic nervous system that oppose the work of the sympathetic nervous system of cardiovascular reactivity in the isometric grip test, changing the cardiovascular system such as vasodilation of blood vessels and decreased Cardiac Output/CO (cardiac output), followed by decreased blood pressure.

Progressive muscle relaxation can stimulate the emergence of chemicals similar to beta blockers in the peripheral nerves that can cover the sympathetic nerve nodes that are useful for reducing tension and lowering blood pressure. Beta blockers can reduce ischemia and angina, because their main effects are negative inotropic and chronotropic. By decreasing the heart rate, the diastolic filling time for coronary perfusion will be prolonged.

Progressive muscle relaxation techniques focus on a muscle activity, identify tense muscles and then reduce tension by doing relaxation techniques to get a feeling of relaxation. Purwanto in Damanik (2018) relaxation response is part of a general decrease in cognitive, physiological and behavioral stimulation. Relaxation can stimulate the emergence of chemicals similar to beta blockers in peripheral nerves that can close the sympathetic nerve nodes which are useful for reducing tension and lowering blood pressure. Progressive muscle relaxation can increase relaxation by reducing sympathetic nerve activity and increasing parasympathetic nerve activity releasing the neurotransmitter acetylcholine to inhibit sympathetic nerve activity by reducing heart muscle contractility, arteriolar and venous vasodilation and then lowering blood pressure.

Research by Damanik & Ziraluo (2018) entitled the effect of progressive muscle relaxation techniques on reducing blood pressure in hypertensive patients, with a quasi-experimental research design, the average blood pressure value before and after the intervention was given decreased systolic by 5 mmHg, and diastolic 2 mmHg. Susilawati's research (2019) entitled the effect of murottal Al-Qur'an therapy on reducing blood pressure in elderly people with hypertension at PSTW Budi Luhur, Jambi City, with a pre-experimental design the average blood pressure value of respondents decreased systolic by 10.5 mmHg, and diastolic 6.00 mmHg. Research by Fernalia et al. (2020) entitled the effect of Al-Qur'an murottal therapy of Surah Al-Kahfi on reducing blood pressure in the elderly with hypertension at the Tresna Wedha Bengkulu social home, a pre-test and post-test one group design study, obtained an average result of a decrease in systolic blood pressure of 7.41 mmHg and diastolic 4.08 mmHg.

There was a difference in systolic and diastolic blood pressure in the intervention group, the intervention group was given a combination of murottal Al-Qur'an therapy and progressive muscle relaxation and continued to consume standard hypertension medication, while the control group was only given standard hypertension medication. There was a difference in blood pressure reduction possibly due to differences in treatment in the control group and treatment group respondents and the duration of the intervention. Thus, women of childbearing age with hypertension can lower high blood pressure with complementary therapy with a combination of murottal Al-Qur'an therapy and progressive muscle relaxation in addition to continuing to consume standard hypertension medication.

Conclusion

The conclusion of this study is that there is an effect of combination therapy of Al-Quran recitation and progressive muscle relaxation on reducing blood pressure in women of childbearing age with hypertension.

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