

Efficacy of Brisk Walking Exercise and Asma'ul Husna Meditation on Hypertension in Women of Childbearing Age

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ABSTRACT

Background: Hypertension is still one of the major health problems in Indonesia, especially in women of childbearing age (WUS). Management of hypertension through non-pharmacological methods such as exercise and spiritual approaches has proven to be effective and efficient. Brisk Walking Exercise (BWE) and Dzikir Asma'ul Husna (DAH) Meditation are promising interventions in holistic blood pressure control. **Objective:** To determine the effectiveness of the combination of Brisk Walking Exercise and Dzikir Asma'ul Husna Meditation (BWE-DAH) on blood pressure in women of childbearing age with hypertension. **Methods:** The research design is quasi-experimental with pre-post test control group design. The sample amounted to 34 women of childbearing age who were divided into two groups, namely the intervention group (BWE-DAH) and the control group (BWE alone). The intervention was conducted for 2 weeks. Data were analyzed using Wilcoxon and Mann-Whitney tests. **Results:** The intervention group showed a significant reduction in systolic (mean reduction 17.4 mmHg) and diastolic (mean reduction 7.7 mmHg) blood pressure ($p < 0.05$). The control group only showed a significant reduction in diastolic pressure (mean 3.4 mmHg). The results of the comparison between the two groups showed a statistically significant difference in systolic blood pressure, while no significant difference was found in diastolic blood pressure. **Conclusion:** the combination of Fast Walking Exercise and Meditation on the Dhikr of Asma'ul Husna is more effective in reducing systolic blood pressure than just doing Fast Walking Exercise alone. These results suggest that a spiritual approach can strengthen the effectiveness of physical interventions in the management of hypertension.

Introduction

The Maternal Mortality Ratio (MMR) is defined as the number of maternal deaths over a specified period of time per 100,000 live births attributable to pregnancy or its management (excluding unintentional or incidental causes) during pregnancy, childbirth and 42 days after the end of pregnancy, regardless of the duration and location of the pregnancy (WHO, 2024). The MMR in Indonesia has currently reached 189 per 100,000 live births (WHO, 2023). When compared to WHO data in 2020 this figure has decreased. In 2020, the MMR reached 223 per 100,000 live births (Kemenkes RI, 2024).

Indonesia ranks second highest in ASEAN in terms of maternal mortality after Laos (Banowo & Asha, 2024). According to the Ministry of Health of the Republic of Indonesia in 2022, East Java ranked as the second highest province contributing 50% of maternal mortality in 2023, with 499 maternal deaths (Kementerian Kesehatan Republik Indonesia, 2023).



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Bangkalan district ranked 10th in terms of MMR in East Java and this ranking did not decrease in 2023 even though MMR caused by hypertension decreased. In 2022, the district ranked second in terms of MMR caused by hypertension after Jember. AKI was recorded at 16 maternal deaths with 9 cases of hypertension (Dinas Kesehatan Provinsi Jawa Timur, 2023).

The number of people with hypertension continues to increase every year. This is shown by data obtained from (WHO) in 2015, which there are 1.13 billion people in the world who have hypertension. WHO estimates that by 2025 as many as 1.5 billion people will suffer from hypertension, with an estimated 10.44 million people dying each year due to hypertension and other complications (Amalia, Sudirman, Endang, Suwondo, & Arwani, 2023).

Indonesia itself has a high rate of hypertension and health problems. According to the 2018 Riskesdas data, there were 63 million cases of hypertension in Indonesia, and the overall mortality rate due to hypertension was 427,000. When compared to the results of the 2018 Basic Health Research (Riskesdas), the 2023 SKI shows a decrease in the prevalence of hypertension, both based on doctor's diagnosis and blood pressure measurement (SKI, 2023). In the 2018 Riskesdas, the prevalence of hypertension in Indonesia now stands at 34.1%, while the WHO aims to reduce the prevalence of hypertension to 33% between 2010 and 2030 (WHO, 2023).

Hypertension is one of the main causes that play a role in increasing maternal mortality and morbidity during pregnancy (Iryaningrum, Yuwono, & Cahyadi, 2023). According to data from WHO, hypertension is responsible for millions of deaths each year worldwide and is classified as an urgent issue in public health (WHO, 2023). In Indonesia, the results of the 2018 Riskesdas showed that the prevalence of hypertension reached 34.1%, which has a major impact on women of childbearing age (WUS), which is a productive age group that is vulnerable to physiological changes (SKI, 2023).

Modung Sub-district in Bangkalan Regency is an area with a high prevalence of hypertension (Dinas Komunikasi dan Informatika, 2023). Modung sub-district ranks 13th in hypertension cases in Bangkalan Regency. Although not the highest, the number of people with hypertension in this sub-district has continued to increase over the past three years (2021-2023). In 2021, there were 13,219 cases and increased in 2022 to 13,384 cases and continued to increase until in 2023 to 13,414 cases. with an increase of 30 cases. This condition shows a worrying trend because there are other sub-districts that are ranked lower, namely 15th, but experienced a greater difference in increase, namely 40 cases. This indicates that although the increase in the number of patients in Modung is smaller in numbers, hypertension cases in this sub-district continue to grow and need immediate attention to prevent further spikes (Dinas Komunikasi dan Informatika, 2023). Pharmacological treatment of hypertension is not always accessible to all levels of society, especially in rural areas. Therefore, non-pharmacological interventions such as exercise and spiritual approaches are effective and affordable alternatives.

Hypertension is an increase in systolic blood pressure (SBP) of more than 140 mmHg and diastolic blood pressure (DBP) of more than 90 mmHg in two measurements with an interval of five minutes in a state of rest or calm (Maring, Noina, Purnawan, & Ndun, 2021). Primary hypertension accounts for 90% of all hypertension cases (P2PTM Kemenkes RI, 2018). 90% of all hypertension cases are primary hypertension and 10% are secondary hypertension (P2PTM Kemenkes RI, 2018). Primary hypertension is blood pressure of 140/90 mmHg or more, at the age of 18 years and over with unknown causes. Measurements are taken 2 or more times in a sitting position, then the average is taken, on two or more visits it is usually often associated with lifestyle, genetic and others While secondary hypertension is congenital from other diseases such as kidney disease. (M, Black, & Hawks, 2014).



Risk factors for hypertension are divided into two, namely risk factors that cannot be changed such as genetics / heredity, age, gender, and ethnicity. While risk factors that can be changed such as knowledge, sleep patterns, diet, caffeine, obesity, physical activity, stress, and smoking habits (Nurjannah & Indrawati, 2023). A history of hypertension has a 4-fold risk of hypertension compared to pregnant women without a history of hypertension (Astuti, et al., 2022). Management of hypertension consists of two types, namely pharmacology and non-pharmacology (Pradono, Kusumawardani, & Rachmanila, 2020). Management of hypertension in the government is currently only limited to health education during posbindu, while for pharmacological management of hypertension the government has not provided it for free or free. So that most people with hypertension still have to buy it at the nearest pharmacy, and it will be very ineffective, especially for people whose economy is middle to lower. Therefore, non-pharmacological treatment that is minimally expensive and easy to do and is community-based is needed in handling this hypertension. One form of non-pharmacological method is brisk walking exercise.

Brisk Walking Exercise (BWE) is a form of light physical activity that is easy to do and has been shown to reduce blood pressure (Lee, et al., 2021) . This physical activity can increase blood flow, improve body metabolism, and reduce peripheral vascular resistance (Lenggogeni, 2024) . Brisk walking exercise as a form of aerobic exercise is a moderate form of exercise for hypertensive patients using brisk walking techniques for 20-30 minutes at an average speed of 4-6 km / hour. This sport is a dynamic sport that involves large muscles so that it has many health benefits (Sari & Palupi, 2024) .

On the other hand, dhikr as a form of spiritual meditation has long been recognized in the Islamic tradition as a way to increase mental calmness and reduce stress, which is one of the factors causing hypertension (Amalia, Sudirman, Endang, Suwondo, & Arwani, 2023) . Dhikr, especially with the recitation of Asma'ul Husna, is believed to be able to provide a calming effect and psychological stability which has an impact on the balance of the autonomic nervous system (Imardani, Sari, & C.N, 2019) .

The combination of BWE and dhikr of Asma'ul Husna (BWE-DAH) offers a holistic approach that combines physical and spiritual interventions. This intervention is in line with the principles of midwifery services that are oriented towards a bio-psycho-social-spiritual approach, and can be applied as part of community-based health promotion.

This study aims to examine the efficacy of the BWE-DAH combination on blood pressure in WUS who experience hypertension, as a preventive effort in reducing MMR through the treatment of hypertension before pregnancy.

Research Methods

This study used a quasi-experimental design with a pre-test and post-test approach and a control group. The research location was in the working area of the Modung Health Center, Bangkalan Regency.

The population was all women of childbearing age (15-49 years) who had mild to moderate hypertension. The sampling technique used purposive sampling with a total sample of 34 people, who were divided evenly into the intervention group (n = 17) and the control group (n = 17).

Inclusion Criteria : 1) WUS who are not taking hypertension medication 2) WUS who are not sick 3) WUS who do not have a history of severe hypertension ($\geq 180/110$ mmHg) 4) WUS who have blood pressure that enters the pre-hypertension category according to ACC, AHA and 9 other organizations 5) WUS who are fasting and within the age range of 15-45 years old 6) WUS who are married whether they have been pregnant or not 7) WUS who do not smoke and do not consume alcohol 8) WUS who do not have a history of high blood sugar 9) WUS who are



not on a diet 10) WUS who have a body mass index (BMI) >25 (including the overweight category) . **Exclusion Criteria:** 1) WUS who have a history of chronic heart failure 2) WUS who are experiencing menstruation 3) WUS who did not follow the intervention from start to finish

Intervention Procedure: The intervention group was given a combination of BWE for 30 minutes and dhikr of Asma'ul Husna for 15 minutes daily for 14 days. Dhikr was performed in a relaxed sitting position by listening to Asma'ul Husna audio. The control group only did BWE for 30 minutes without dhikr meditation.

Instruments and Data Analysis: Blood pressure was measured using a digital sphygmomanometer before and after treatment. The validity of the device was pre-tested. Data were analyzed using the Wilcoxon test to see within-group changes, and the Mann-Whitney test to see between-group differences.

Results

1. Characteristics of Respondents

In this study the respondents were classified as in the following table:

Table 1 Characteristics of Respondents

Characteristics of Respondents	Research Group			
	Control Group (N=17)		Intervention Group (N=17)	
	n	(%)	n	(%)
Age				
Mean±SD		2.65±0.786		2.65±0.786
Education				
Elementary	2	11.8	1	5.9
Junior high	7	41.2	5	29.4
High school	8	47.1	11	64.7
College	0	0	0	0
Total	17	100	17	100
Occupation				
Housewife	6	35.3	9	52.9
Farmer	9	52.9	4	23.5
Self-employed	2	11.8	4	23.5
Total	17	100	17	100
History of Hypertension				
Yes	16	94.1	16	94.1
No	1	5.9	1	5.9
Total	17	100	17	100

The characteristics of respondents in this study include age, education, and occupation. Most respondents in both groups, both control and intervention groups, had the same mean age of 2.65 with a standard deviation of 0.786. In terms of education level, the majority of respondents had a high school education, as many as 8 people (47.1%) in the control group and 11 people (64.7%) in the intervention group. Furthermore, in the control group there were 7 (41.2%) junior high school graduates and 2 (11.8%) elementary school graduates, while in the intervention group there were 5 (29.4%) junior high school graduates and 1 (5.9%) elementary school graduate. There were no respondents with tertiary education in both groups.

In terms of occupation, the majority of respondents in the control group worked as farmers, as many as 9 people (52.9%), followed by housewives as many as 6 people (35.3%), and self-employed as many as 2 people (11.8%). Meanwhile, in the intervention group, most respondents were housewives as many as 9 people (52.9%), followed by farmers as many as 4 people (23.5%) and self-employed as many as 4 people (23.5%).



For the history of hypertension, the majority of respondents in both the intervention and control groups had a history of hypertension. A total of 16 people (94.1%) in each group stated that they had a history of hypertension, while only 1 person (5.9%) in each group did not have such a history. This shows that the proportion of history of hypertension is relatively the same in both groups, so the basic characteristics of respondents related to hypertension factors can be said to be equivalent.

2. Wilcoxon Test

After the statistical normality test shows an abnormal distribution value, the test analysis in this study uses a non-parametric test analysis, so the non-parametric test to determine the mean blood pressure in each group is using the Wilcoxon test. The results of the Wilcoxon test on the mean SBP and DBP will be presented in detail from each group as follows;

1) BWE-DAH Intervention Group

Table 2 Distribution of Mean Pre-Test and Post-Test Systolic Blood Pressure Values of the Intervention Group

Variables	Mean	SD	Min-Max
SBP Pre	135.24	11.344	120-169
SBP Post 1	120.47	11.325	103-142
SBP Post 2	117.47	7.090	106-140

Based on the results of descriptive analysis in table 2 above, it can be seen that the mean SBP value of participants in the intervention group before treatment (pre-test) was 135.24 mmHg with a Standard Deviation (SD) of 11.344 and a range of values between 120-169 mmHg. This value indicates that most participants were in the mild to moderate hypertension category. After the first intervention was given, there was a decrease in mean systolic blood pressure to 120.47 mmHg with an SD of 11.325, and minimum and maximum values ranging from 103-142 mmHg. This decrease indicates a positive initial response to the intervention.

Furthermore, after the intervention was continued, the mean systolic blood pressure of the participants decreased further to 117.47 mmHg with an SD that also decreased to 7.090, and a narrower range of values between 106-140 mmHg. The decrease in mean and the decrease in SD indicate that the intervention was not only effective in reducing blood pressure, but also resulted in more homogeneous values among participants.

Table 3 Distribution of Mean Pre-Test and Post-Test Diastolic Blood Pressure Values of the Intervention Group

Variables	Mean	SD	Min-Max
DBP Pre	86.06	8.105	74-99
DBP Post 1	78.00	7.665	68-92
DBP Post 2	75.29	7.312	66-89

Based on the results of descriptive analysis in table 3 above, it is known that the mean DBP value of participants in the intervention group before treatment (pre-test) is 86.06 mmHg with SD 8.105 and the range of values between 74-99 mmHg, in general the mean value is still in the pre-hypertension or mild hypertension category.

After the first intervention, the mean diastolic blood pressure decreased to 78.00 mmHg, with an SD of 7.665 and a more reasonable minimum-maximum value of 68-92 mmHg. This decrease indicates an initial positive impact of the intervention on reducing diastolic blood pressure. Subsequently, after the intervention continued, the mean diastolic blood pressure of the participants again decreased to 75.29 mmHg, accompanied by a smaller SD of 7.312, and a range of values between 66-89 mmHg. This suggests that in addition to lowering diastolic blood pressure, the intervention also made the results between participants more consistent.

2) Control Group With Brisk Walking Exercise Intervention



Table 4 Distribution of Mean Pre-Test and Post-Test Systolic Blood Pressure Values of the Control Group

Variables	Mean	SD	Min-Max
SBP Pre	121.71	4.753	116-134
SBP Post 1	113.29	6.789	102-127
SBP Post 2	113.41	3.572	105-120

Based on table 4 above, it can be seen the mean value of SBP of respondents before treatment and after treatment. The distribution of the mean value of SBP Pre in the control group is 121.71 mmHg with SD 4.753. Respondents' blood pressure in the minimum-maximum pre-test control group showed blood pressure values were 116-134 mmHg which showed that most respondents were in a mild state of hypertension. After the first brisk walking treatment in the control group, it was found that the mean value of SBP Post 1 decreased to 113.29 mmHg with SD 6.789 with the minimum-maximum value also decreasing to 102-127 mmHg. This decrease indicates a positive initial impact on the control group with the brisk walking intervention alone.

Furthermore, SBP Post 2 in this group showed a mean value of 113.41 mmHg with SD 3.572 and a minimum-maximum of 105-120 mmHg. From these data, the mean value at Post 2 has increased slightly, although not much, but the SD has decreased, which means that the respondents' blood pressure has become more consistent. But even so, the minimum-maximum value still decreased so that it can be interpreted that the brisk walking intervention contributed to a decrease in systolic blood pressure more evenly among control group respondents.

Table 5 Distribution of Mean Pre-Test and Post-Test Diastolic Blood Pressure Values of the Control Group

Variables	Mean	SD	Min-Max
DBP Pre	82.82	5.353	73-91
DBP Post 1	75.29	7.174	64-86
DBP Post 2	72.29	7.174	61-83

Based on the results of the descriptive analysis in table 5 above, the mean value of DBP at the pre stage shows 82.82 mmHg with a standard deviation of 5.353 mmHg, and a range of values between 73-91 mmHg. This value reflects the diastolic blood pressure condition of the respondents before being given the treatment/intervention.

After the first stage of intervention, there was a decrease in mean diastolic blood pressure to 75.29 mmHg, with a standard deviation of 7.174 mmHg. The range of DBP values at this stage was in the range of 64-86 mmHg, indicating a decrease in diastolic blood pressure in most respondents after receiving the first intervention.

The decrease in DBP continued after the second stage of intervention. The mean DBP value was recorded at 72.29 mmHg, with the standard deviation still at 7.174 mmHg. The range of DBP values at this stage was 61-83 mmHg. This data indicates that the intervention had the effect of progressively reducing diastolic blood pressure over time.

Overall, these descriptive results show a downward trend in diastolic blood pressure values from pre to post 2, suggesting that the intervention is potentially effective in reducing diastolic blood pressure in respondents.

3. Mann-Whitney U

Table 6 Mann-Whitney U Test Results Post 1

Variables	N	Mean Rank	Sum of Ranks	P-Value
DBP Post 1 Intervention	17	19,41	330,00	0,262
DBP Post 1 Control	17	15,59	265,00	
SBP Post 1 Intervention	17	21,18	360,00	0,031
SBP Post 1 Control	17	13,82	235,00	

Table 6 above explains that after the first intervention, statistical analysis using the Mann-Whitney test showed that there was no significant difference between the intervention group and the control group on DBP. The p value obtained was 0.262 ($p > 0.05$), indicating that the difference in mean ratings between the two groups was not statistically strong enough to conclude an effect of the intervention on diastolic blood pressure. The average rating in the intervention group was 19.41 with a total rating score of 330.00, while in the control group the average rating was 15.59 with a total rating of 265.00. Although the intervention group showed a higher mean score, the difference was not significant. Therefore, it can be concluded that the intervention provided has not had a meaningful impact in reducing diastolic blood pressure at this stage.

In contrast, different results were shown in SBP. Based on the Mann-Whitney test results, there was a significant difference between the intervention group and the control group on systolic blood pressure after the first intervention. This was indicated by a p value of 0.031 ($p < 0.05$), indicating that the intervention had a significant effect on changes in systolic blood pressure. The intervention group had an average rating of 21.18 with a total rating of 360.00, while the control group only had an average rating of 13.82 with a total rating of 235.00. This difference indicates that participants in the intervention group experienced a better reduction in systolic blood pressure than the control group after receiving treatment in the first session. Thus, the intervention proved effective in significantly reducing systolic blood pressure, although the effect on diastolic blood pressure has not shown similar results at this early stage.

Table 7 Mann-Whitney U Test Results Post 2

Variables	N	Mean Rank	Sum of Ranks	P-Value
DBP Post 2 Intervention	17	19,56	332,50	0,227
DBP Post 2 Control	17	15,44	262,50	
SBP Post 2 Intervention	17	21,79	370,50	0,012
SBP Post 2 Control	17	13,21	224,50	

After the second intervention in table 6 above, data analysis using the Mann-Whitney test was again used to compare blood pressure between the intervention and control groups. The results of the analysis showed that there was no statistically significant difference in DBP between the two groups. The p value obtained was 0.227 ($p > 0.05$), indicating that the difference in mean ratings between the intervention and control groups was not significant. The intervention group had an average rating of 19.56 with a total rating of 332.50, while the control group had an average rating of 15.44 with a total rating of 262.50. Although numerically the average rating of the intervention group was higher, this was not strong enough to be

concluded as a statistically significant difference. Thus, the intervention provided in the second session has not shown a significant effect on reducing diastolic blood pressure.

Meanwhile, different results were shown in SBP after the second intervention. The Mann-Whitney test showed that there was a significant difference between the intervention group and the control group, with a p value of 0.012 ($p < 0.05$). This indicates that the intervention provided has a significant effect on reducing systolic blood pressure. The average rating in the intervention group was 21.79 with a total rating of 370.50, while the control group had an average rating of 13.21 and a total rating of 224.50. The higher mean rating in the intervention group indicates that this group experienced a greater reduction in systolic blood pressure compared to the control group. These results indicate that the intervention, which was carried out consistently until the second stage, had a stronger impact in reducing systolic blood pressure, although it did not have a significant result on diastolic blood pressure.

Discussion

1. Systolic and Diastolic Blood Pressure Characteristics

Blood pressure is an important indicator in assessing the function of a person's cardiovascular system. In general, blood pressure is divided into two components, namely systolic blood pressure and diastolic blood pressure (Walter, et al., 1990). Each has different physiological characteristics and sensitivity to interventions and environmental influences. Understanding the differences between the two is important in the context of this study, which assessed the effectiveness of brisk walking exercise and dhikr interventions on blood pressure in women of childbearing age (WUS) with hypertension.

Systolic blood pressure occurs when the heart contracts (systole phase) and pumps blood into the arteries. This is the phase when the pressure in the arteries is at its highest due to the push from the heart. In contrast, diastolic blood pressure occurs when the heart relaxes (diastole phase) and replenishes blood from the veins. The pressure in the blood vessels in this phase is lower than during contraction (Fogoros & Ali, 2025).

Systolic blood pressure reflects the pumping force of the heart and the resistance of the main arteries to blood flow. This means that systolic pressure indicates how strongly the heart pumps blood throughout the body. Meanwhile, diastolic blood pressure reflects the elasticity and resistance of peripheral blood vessels, especially when the heart is not in the pumping phase. Diastolic pressure is an important indicator in assessing basic vascular conditions, such as arterial stiffness or capillary resistance (Lee, 2023).

In a study conducted by Tomitani, et al., (2022), systolic pressure was shown to be more sensitive to the effects of physical activity, emotional stress, and sympathetic nervous system stimulation, compared to diastolic pressure. This is due to the stronger role of the sympathetic nervous system on large vessel tone and cardiac responses during stress or physical activity. In contrast, diastolic pressure tends to be more stable and is more influenced by vascular baseline conditions, such as arterial stiffness and capillary resistance. Therefore, interventions of a calming or spiritual nature such as dhikr more quickly affect systolic pressure.

2. Effect of BWE-DAH Intervention on Blood Pressure (Systolic and Diastolic)

This study aims to evaluate the effectiveness of the combined intervention of Brisk Walking Exercise and Dhikr of Asmaul Husna (BWE-DAH) in reducing blood pressure in women of reproductive age who experience hypertension. The intervention was conducted over a period of time, and blood pressure measurements were taken at three times: before the intervention, after the first intervention, and after the second intervention. Blood pressure measured included SBP and DBP.

a. Blood Pressure Reduction in the Intervention Group (BWE-DAH)



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The results of the analysis showed that there was a significant decrease in blood pressure in the intervention group after being given BWE-DAH combination therapy. The mean SBP dropped from 135.24 mmHg at pre-test to 120.47 mmHg at post 1, and then decreased again to 117.47 mmHg at post 2. This decrease was not only statistically significant, but also clinically showed a shift from the hypertension category towards the normal limit.

Similarly, DBP decreased from 86.06 mmHg to 78.00 mmHg at post 1, and finally dropped to 75.29 mmHg at post 2. This decrease showed a progressive and consistent improvement during the intervention period.

In terms of distribution, the minimum and maximum values of SBP, which originally ranged from 120-169 mmHg, became narrower in the range of 106-140 mmHg after the second intervention. This indicates not only a decrease in mean blood pressure, but also an increase in consistency of response between participants. The smaller standard deviation also indicates that the response to the intervention became more uniform.

This reduction in blood pressure can be explained through complementary physiological and psychological mechanisms. Brisk walking as a form of light-moderate aerobic exercise has been shown to improve vascular elasticity, increase tissue perfusion, and decrease systemic peripheral resistance, which ultimately leads to lower blood pressure. In addition, physical activity improves insulin sensitivity and triggers the release of endorphins that have an impact on reducing stress, which is one of the main risk factors for hypertension (Wulandari, Firdaus, & Rahmasari, 2024).

The results of this study indicate that brisk walking exercise (BWE) is effective in reducing systolic and diastolic blood pressure in women of childbearing age who experience hypertension. These results are in line with previous research showing that BWE can reduce systolic blood pressure by 3.73 mmHg and diastolic by 2.86 mmHg in hypertensive patients. This exercise stimulates muscle contraction, increases heart rate capacity, and increases oxygen in the tissue, which contributes to lowering blood pressure (Sari & Palupi, 2024).

Meanwhile, Dzikir Asmaul Husna is a focused and repetitive form of spiritual meditation, which has the effect of calming the central nervous system, decreasing the activity of the sympathetic nervous system, and increasing the activation of the parasympathetic system (Purnika, Roesmono, & Kassaming, 2019). This has an impact on reducing heart rate, dilating blood vessels, and ultimately reducing blood pressure. Previous research by Ariyanti et al. (2020) showed that regular dhikr intervention for 2 weeks was able to significantly reduce blood pressure in elderly patients with hypertension.

The results also show that meditation on the dhikr of Asma'ul Husna is effective in lowering blood pressure, especially systolic blood pressure. This is supported by research that found that Asma'ul Husna dhikr therapy can reduce blood pressure in hypertensive patients. Dhikr provides a relaxing effect that can reduce stress and anxiety, factors that contribute to increased blood pressure (Lestanti & Rejeki, 2022).

Thus, the combination of brisk walking and dhikr not only targets the physical aspect, but also the psychological and spiritual aspects of the patient, making it a more holistic approach and touching the root cause of hypertension more comprehensively.

b. Comparison with Control Group (Brisk Walking)

The control group in this study was only given the brisk walking intervention, which was also shown to reduce blood pressure, although not as much as the intervention group. The mean systolic blood pressure decreased from 121.71 mmHg to 113.29 mmHg at post 1, and slightly decreased to 113.41 mmHg at post 2. For diastolic blood pressure, a decrease was recorded from 82.82 mmHg to 75.29 mmHg, and further to 72.29 mmHg at post 2.



Despite showing positive results, the decrease in the control group was smaller than the intervention group, both in mean scores and range of scores. This confirms that although brisk walking is effective as a single intervention, the addition of dhikr elements makes a significant additional contribution, especially in the aspects of stress management and emotional stabilization.

Research by Cornelissen and Smart (2013) in their meta-analysis concluded that regular moderate aerobic exercise can reduce SBP by about 4-9 mmHg and DBP by 3-5 mmHg. These results are in line with the findings of the control group, but the significant increase in effect in the intervention group suggests that there is an additional role of spiritual aspects.

3. Inferential Statistical Test (Wilcoxon and Mann-Whitney)

The Wilcoxon test showed a significant difference between the pre-test and post-test results in the intervention group for both systolic and diastolic blood pressure ($p < 0.05$), indicating that the intervention had a meaningful effect. Meanwhile, in the control group, a significant reduction only occurred in diastolic blood pressure and not in systolic.

Mann-Whitney test was used to test the difference in effectiveness between two groups. The results of the analysis showed that at post 1 and post 2, there was a significant difference in systolic blood pressure between the intervention group and the control group ($p = 0.031$ and $p = 0.012$). This indicates that the addition of dhikr in the intervention had a greater impact than brisk walking alone. However, for diastolic blood pressure, no significant difference was found ($p > 0.05$) at both measurement times.

This difference in results indicates that systolic blood pressure is more responsive to spiritual-based interventions than diastolic blood pressure. This may be due to the fact that SBP is more influenced by sympathetic nervous system activity closely associated with stress and anxiety, which can be dampened by dhikr activity.

4. Clinical and Theoretical Implications

Clinically, a blood pressure reduction of ≥ 10 mmHg in SBP is considered meaningful in reducing the risk of hypertension complications such as stroke and coronary heart disease. Therefore, the ± 17 mmHg reduction in SBP achieved by the intervention group is of great clinical importance.

This finding also supports the biopsychosocial theory in health approaches, that a person's physiological condition is strongly influenced by their psychological and spiritual condition. The combination of physical and spiritual interventions conducted in this study reflects this approach, and the results demonstrate the effectiveness of this integrative approach in managing hypertension.

In addition, the results of this study also have important implications in the context of promotion and prevention. The BWE-DAH intervention is non-pharmacological, inexpensive, safe, and can be done independently at home, so it can be used as an alternative or companion to drug therapy, especially for patients with limited access to health services or who do not want to depend on long-term medication.

5. Research Limitations

This study has several limitations that need to be considered in interpreting the results:

1) Limited Area Scope

The study was only conducted in the working area of Modung Health Center, so the results may not be generalizable to other areas with different social, cultural, and health facility characteristics.

2) Limited sample size

The number of respondents in this study was limited, so the variability of the data may not fully reflect the broad population of women of childbearing age with hypertension.



3) Relatively Short Duration of Intervention

The Brisk Walking Exercise and Dzikir Asma'ul Husna meditation interventions were conducted in a relatively short period of time. The long-term effects of this intervention cannot be assessed thoroughly.

4) Respondent Compliance

The level of compliance of respondents in carrying out the intervention independently outside the supervision of the researcher cannot be fully controlled, which may affect the results of the study.

5) Influence of Other Factors

The study did not control for all external factors that could affect blood pressure, such as food consumption, daily stress or sleep quality, which could be confounding variables.

Conclusion

Based on the results of research on the effect of the combination of Brisk Walking Exercise and Dhikr of Asmaul Husna (BWE-DAH) on blood pressure in women of reproductive age who experience hypertension, it can be concluded as follows:

1. The BWE-DAH intervention proved effective in significantly reducing systolic and diastolic blood pressure. This reduction occurred progressively after the first intervention to the second intervention, indicating that the therapeutic effect is sustained and not just momentary.
2. The intervention group that received the BWE-DAH combination showed a greater reduction in blood pressure compared to the control group that only performed brisk walking. This confirms that the dhikr component has an important contribution in helping to stabilize blood pressure through its influence on the autonomic nervous system and decreased stress levels.
3. A statistically significant difference was found in systolic blood pressure between the two groups, both after the first and second interventions, while the difference in diastolic blood pressure between the groups was not statistically significant. This suggests that blood pressure systolic is more sensitive to the influence of interventions involving spiritual aspects.
4. Overall, the combination of physical and spiritual activities provides an effective holistic approach in the non-pharmacological management of hypertension, and can be used as a supporting alternative in promotive and preventive efforts against hypertension in women of reproductive age.

Based on the research results and conclusions above, the researcher provides the following suggestions:

1. For the community, especially women of reproductive age who experience hypertension, it is recommended to routinely do brisk walking for at least 30 minutes per day and accompany it with the dhikr of Asmaul Husna as a form of blood pressure management that is easy, cheap, and safe to do at home.
2. Health workers, especially community nurses and health promoters, are expected to utilize the BWE-DAH combination approach in health education and promotion programs as an applicable non-pharmacological intervention, especially in reducing blood pressure in the community.
3. For future researchers, it is recommended to conduct further research with a larger sample size and longer intervention time, as well as considering other variables such as stress levels, sleep quality, and stress hormones (cortisol), in order to obtain a more comprehensive understanding of the mechanism of action of the BWE-DAH intervention.

4. For educational institutions, the results of this study can be used as a reference for curriculum development based on integrative interventions that combine physical and spiritual approaches in the management of non-communicable diseases.

Ethical Approval and Participation Consent

This study has met ethical approval and participation approval from various related parties. The following reference number is issued from the ethics committee No. 100/03/kepk-stikesbwi/i/2024-2025: 100/03/KEPK-STIKESBWI/I/2024-2025

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