International Journal of Health Science and Technology e-ISSN 2685-8673
Vol. 5, No. 3 (2024), pp. (246-255)
https://doi.org/10.31101/ijhst.v5i3.3406

Original Research Paper

The effect of prayer beads therapy on lowering blood pressure in hypertensive patients

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Submitted: September 22, 2023 Revised: January 18, 2024 Accepted: March 5, 2024

Abstract
Hypertension is a condition of a person's blood pressure above the normal number of 120/80 mmHg. Currently, the role of nurses in the development of nursing interventions is one of which is to develop sharing supporting interventions to overcome hypertension problems Management of nonpharmacological hypertension is considered important and can be an alternative such as prayer beads to overcome hypertension including through emotional management so that it can make the body always in a relaxed and calm state. This study aims to determine the effect of prayer beads therapy on data pressure in hypertensive patients. The research method used a quasi-experimental pre and post-design with the control group. Consisting of the intervention group and the control group, the number of samples was 24 samples with 12 respondents of the therapeutic intervention group and 12 respondents of the control group, using a simple random sampling technique. The results of this study are the statistical results of the Dependent T test for systolic blood pressure results of $p = 0.001$ ($p < 0.05$) and the Dependent T-test statistical results for diastolic blood pressure results of $p = 0.001$ ($p < 0.05$). Conclusion: then it can be concluded that there is an effect of prayer beads on decreasing systolic and diastolic blood pressure results in the intervention group. Therapy Beads can be used as a solitary nursing self-intervention to lower Blood Pressure in Hypertensive Patients

Keywords: blood pressure; hypertension; prayer beads therapy

1. Introduction

A person with hypertension has blood pressure that is higher than the average, which is 120/80 mmHg. Hypertension is defined as a blood pressure reading in both arms taken over many weeks that is greater than 140/90 mmHg (Nuraini B, 2019). Hypertension is becoming a common public health problem in developing countries. Hypertension that is not immediately treated properly will have an impact on the emergence of degenerative diseases, such as heart disease (Congestive Heart Failure), kidney failure (End Stage Renal Disease), and peripheral vascular disease (American Heart Association (AHA), 2016).

The World Health Organization WHO (2015) shows that around 1.13 billion people in the world suffer from hypertension, meaning that 1 in 3 people in the world are diagnosed with hypertension and only 36.8% of them carry out hypertension prevention behaviors. The number of people with hypertension in the world is increasing every year, it is estimated that by 2025 there will be 1.5 billion people affected by hypertension. It is also estimated that every year 9.4 million people are dying from hypertension and complications (Riskesdas, 2018)

The prevalence of national hypertension based on Basic Health Research (Riskesdas) 2018 states that the prevalence of hypertension in Indonesia is 44.1%. This shows an increase in the prevalence of people with hypertension when compared to the results of Riskesdas 2013 by 25.8%. Both data are

known that only 13.5% are diagnosed by health workers and only 4.7% prevent hypertension. (Riskesdas, 2018)

The high incidence of hypertension is caused by two main factors, namely irreversible factors and changeable factors. Irreversible precipitating factors of hypertension are age and sex. (Andri,2021).

As a person gets older, there will be changes in the arteries in the body to become wider and stiffer which results in reduced capacity and recoil blood accommodated through blood vessels, causing systole pressure to increase (Nuraini B, 2019)

To overcome the problem of hypertension, nurses have various roles, one of which is case manager. As a case manager, nurses are able to identify hypertension problems in each patient and are able to plan, develop various nursing interventions to overcome hypertension problems Currently the role of nurses in the development of nursing interventions, one of which is to develop sharing supporting interventions to overcome hypertension problems Management of nonpharmacological hypertension is considered important and can be an alternative such as prayer beads to overcome hypertension Among them are through emotional management so that it can make the body always in a relaxed and calm state through the application of research and developing nursing intervention research to overcome hypertension problems can be done by observation, independence, health education and collaboration (Apriyati, 2022).

Prayer beads is defined as purifying and glorifying Allah SWT, the meaning of prayer beads is to purify Allah SWT from all evil and from all actions or attributes that are not in accordance with His majesty, glory, affection, and power over all things, Prayer beads can also be interpreted as "Prayer" and "Shalawat" to Allah SWT, What is meant by prayer beads is to say " subhanallah (سبحان الله)", and bertahmid is to say "alhamdulillah (الحمد لله)", while bertakbir is to say "Allahu-akbar (الله أكبر)" (Agustin, 2024)

This method of prayer beads therapy in Islam has one of the benefits, namely making relaxation and controlling blood pressure stable (Basyier, 2013). One method of relaxing that lowers blood pressure just as much as antihypertensive medications is using prayer beads. The smooth muscles in the veins and arteries relax when you practice relaxation techniques. This results in a drop in blood norepinephrine levels, which in turn causes the heart to beat less vigorously, lowering blood pressure. (Mills, 2019)

The results of the preliminary study on July 1, 2023 at the UPT Puskesmas Keramatwatu Serang-Banten. The number of Hypertension patients ranks 2nd (two) after ARI with the number of data for the last year 2022, the number of cases is 302, and the average every month is 42 in 2022

The results of interviews with nurses said they had not provided the concept of spiritual healing in medicine. The results of interviews with 5 hypertensive patients said that they still had an increase in blood pressure, and the symptoms of hypertension greatly disturbed both activities and interactions with room nurses.

The purpose of this study was to determine the Effect of prayer beads therapy on Blood Pressure Results in Hypertensive Patients at UPT Puskesmas Keramatwatu Serang-Banten. The results of this study can contribute to the development of nursing science, especially in the management of Hypertensive Patients

2. Research Methods

2.1.Design

This study employed a pretest-posttest research design with a control group in a quasi-experimental manner. Two groups were used in this design: the intervention group, which received prayer beads, and the control group, which received normal interventions. The intervention group read or recited the Dhikr

for roughly ten minutes, while the control group did not receive any prayer intervention.(Arif Sumantri., 2017).

2.2.Population

The study's population consisted of all 42 hypertension patients whose records were retrieved within the previous two months from UPT Puskesmas Keramatwatu Serang-Banten.

2.3.Sample

The minimum sample for this study was 24 respondents, consisting of 12 Prayer Therapy Interventions and 12 Standard Control groups

2.4.Research Ethics

This research was conducted after obtaining approval from the ethics review board or having passed the ethics review No. 267 / KEPK. UF/II/2023 at Faletehan University. Researchers have explained about this research to prospective respondents including its objectives, methods, benefits and risks. Researchers guarantee the confidentiality of the participants and entitle respondents that they can withdraw from the study at any time without implications for further treatment.

2.5.Statistical Analysis

The typical picture of the sample is ascertained by the application of descriptive statistics. In order to verify the study hypothesis and compare the systolic and diastolic blood pressure readings before and after the prayer beads treatment intervention, a paired t test was used. Version 22 of SPSS is used to process the acquired data. The Shapiro-Wilk test was used to perform data normalcy testing prior to the bivariate test. For every treatment group, normality tests were run. Thus, a p value of >0.05 indicates that the distribution of the data is normal. after which the Paired t test is run.

3. Results and Discussion

3.1.Univariate Analysis

Table 1. Frequency Distribution of Number of Respondents Distribution of respondents by age, gender and occupation (n = 24)

	Intervention Group		Control Group		
	Frequency	**%**	**Frequency**	**%**	**Total**
Age interval					
23 – 35 yrs (*Young Adult*)	2	16.7	2	16.7	4
36 – 45 yrs (*Old Adult*)	6	50.0	6	50.0	12
46 – 55 yrs (*Pre Senior)*	4	33.3	4	33.3	8
Total	**12**	**100**	**12**	**100**	**24**
Gender					
Male	8	66.7	8	66.7	16
woman	4	33.3	4	33.3	8
Total	12	100	12	100	24
Work					
Not Working	1	8.3	1	8.3	2
Work	11	91.7	11	91.7	22
Total	**12**	**100**	**12**	**100**	**24**

Source: Primary Data, 2023

3.1.1. Age

From table 1, the results of the overall age estimation of hypertension sufferers, both control and intervention groups, the most age of hypertensive patients aged 36-45 years (Old Adults), namely 12 in accordance with the opinion of the Ministry of Health of the Republic of Indonesia (2017), blood pressure in old adulthood will tend to be high due to an unhealthy lifestyle so that older adults are at greater risk of developing hypertension (high blood pressure).

Increasing age results in increased blood pressure due to endothelial dysfunction, increased oxygen delivery to tissues, and increased metabolically active concentrations, According to (LeMone, 2016), increasing age can affect the regulation of blood pressure and arterial flexibility, when arteries are less flexible, the pressure in the vessels increases. According to the (Riskesdas, 2018).

The results of this study are in accordance with research conducted by (Aprillya M.T, 2016) with its research entitled The Relationship Between Age, Physical Activity and Stress with the Incidence of Hypertension at the Kawangkoan Health Center. The highest age results for hypertension were obtained at the age of ≥40 years with 53 people (65.4%) and <40 years 4 people (21.1%), which means that the older you are, the more at risk for hypertension.

3.1.2. Gender

Based on Table 1 of the results of research from 24 respondents, the highest sex is male sex times between the total men and women between the intervention and control groups the number of men is greater (men 16 people and women 8 people), according to Aprillya M.T. (2016), men tend to suffer from hypertension than women, men will experience an increased risk of high blood pressure due to HDL cholesterol and LDL cholesterol levels, HDL cholesterol levels become low and elevated LDL cholesterol (low-density lipoprotein) affects the occurrence of atherosclerosis process and results in high blood pressure.

The results of this study are in accordance with research conducted by Arifin, I Wayan, Ni Luh (2016) about factors related to the incidence of hypertension, it was found that hypertension was more prevalent in the male sex with a total of 80 people (71.4%) while women in this study amounted to 32 people (28.6%).

3.1.3. Work

Based on Table 1 of the total working and non-working research results between the intervention and control groups, the number of who worked was larger (who worked 11 people and did not work 1 person), this is in accordance with Fadhila (2021), one of the work-related diseases and often related in the workplace is hypertension. (Riskesdas, 2018). heavy workloads, hectic work schedule can cause stress reactions.

Stress can increase sympathetic nerve activity due to narrowed blood vessels that can increase blood pressure gradually. Riskesdas recorded the highest proportion of sedentary behavior in employees was 42.2%, namely for 3-5.9 hours. Sedentary behavior is behavior that does not do much movement where sitting and lying postures are the most dominant in daily life but do not include bedtime.(Sugiarti, 2021) This behavior is at risk for one of the occurrence of vascular and heart diseases, including hypertension.

The results of this study are in accordance with research conducted by (Imaroh, 2017), in his research entitled Risk Factors That Affect the Incidence of Hypertension in Pregnant Women in the Working Area of the Kedungmundu Health Center, Semarang City In 2017, it was stated that the incidence of hypertension was more common in pregnant women who worked with 19 people (86.4%) while those who did not work as many as 3 people (13.6%).

Table 2. Average Distribution of Systolic Blood Pressure Frequency Before and After Intervention Group Prayer Therapy at Puskesamas Kramatwatu Serang -Banten in 2023 (n = 24)

No	Variable	f	Mean	Median	SD	Min- Max
1	**Intervention Group**					
	Systolic Blood Pressure Results Before		164,17	160.00	13.790	**150 – 190**
	Systolic Blood Pressure Results After	12	136.67	130.00	17.233	**120 – 170**
	Average difference in systolic blood pressure reduction		**27.5**			

Source: Primary Data, 2023

Table 2 above provides information on the average systolic blood pressure results of hypertensive patients in the intervention group prior to prayer beads therapy. It shows that these results ranged from 150 mmHg for the lowest systolic blood pressure results to 190 mmHg for the highest systolic blood pressure results to 136.67 (mean), median 130.00, standard deviation 17.233, with the lowest systolic blood pressure result at 120 mmHg and the highest systolic result at 170 mmHg. Therefore, the mean value of systolic blood pressure results in the intervention group was 27.5.

Table 3. Average Distribution of Systolic Blood Pressure Frequency Before and after which no intervention was carried out in the intervention group prayer beads at the Kramatwatu Serang -Banten Health Center in 2023 (n = 24)

No	Variable	f	Mean	Median	SD	Min- Max
2.	**Control Group**					
	Systolic Blood Pressure Results Before	12	165.00	160.00	13.143	**150 – 190**
	Systolic Blood Pressure Results After		159.17	160.00	13.114	**130 – 180**
	Average difference in systolic blood pressure reduction		**5.83**			

Source: Primary Data, 2023

According to table 3 above, the average systolic blood pressure results for hypertensive patients in the control group prior to receiving standard therapy were 165.00 (mean), median of 160.00, standard deviation of 13.143, with the lowest systolic blood pressure results of 150 mmHg, the highest systolic blood pressure results of 190 mmHg, and the average systolic blood pressure results of hypertensive patients in the control group following the administration of standard procedures were 159.17 (mean), median 160.00, standard deviation 13.114, with the lowest systolic blood pressure result of 130 and the highest systolic blood pressure result of 180 mmHg. Consequently, the mean value of systolic blood pressure result in the control group was 5.83.

Table 4. Average Distribution of Diastolic Blood Pressure Frequency Before and After Intervention Group Prayer Therapy at Puskesamas Kramatwatu Serang -Banten in 2023 (n = 24)

No	Variable	f	Mean	Median	SD	Min- Max
1.	**Intervention group**					
	Before Diastolic Blood Pressure Results		95.00	95.00	7.977	**80 – 110**
	Diastolic blood pressure results After	12	80.83	80.00	9.962	**70 – 100**
	Average Difference in Diastolic Blood Pressure Reduction		**14.17**			

Source: Primary Data, 2023

Table 4 above provides information on the average diastolic blood pressure results in hypertensive patients in the intervention group prior to prayer beads being administered. It shows that the lowest diastolic blood pressure results were 80 mmHg, the highest diastolic blood pressure results were 110 mmHg, and the average diastolic blood pressure results in patients with hypertension intervention group after receiving prayer beads therapy were 80.83 (mean), median 80.00, standard deviation 9.962, with the lowest diastolic blood pressure result of 70 mmHg and the highest diastolic blood pressure result at 110 mmHg. Consequently, the mean diastolic blood pressure result in the intervention group was 14.17.

Table 5. Average Distribution of Diastolic Blood Pressure Frequency Before and after which no intervention was carried out in the intervention group prayer beads at the Kramatwatu Serang -Banten Health Center in 2023 (n = 24)

No	Variable	f	Mean	Median	SD	Min- Max
2.	**Control Group**					
	Diastolic blood pressure results Before		95.00	95.00	7.977	**80 – 110**
	Diastolic blood pressure results After	12	93.33	90.00	8.876	**80 – 110**
	Average Difference in Diastolic Blood Pressure Reduction		**1.67**			

Source: Primary Data, 2023

According to table 5 above, the average diastolic blood pressure results in hypertensive patients in the control group before receiving standard therapy were 95.00 (mean), median of 95.00, standard deviation of 7.977, with the lowest diastolic blood pressure results of 80 mmHg, the highest diastolic blood pressure results of 110 mmHg, and the average diastolic blood pressure results in hypertensive patients in the control group after receiving standard procedures of 93.33 (mean), median 90.00, standard deviation 8.876, with the lowest diastolic blood pressure result of 80 and the highest systolic blood pressure result of 110 mmHg. As a result, the mean diastolic blood pressure results in the control group were 1.67.

3.2.Bivariate Analysis

Table 6. Average Distribution of Systolic, Diastolic Blood Pressure Frequency Before and after prayer beads were carried out in the intervention group at the Kramatwatu Serang -Banten Health Center in 2023 (n = 24)

Variable	f	Mean	SD	Dependent T Test P = Value
Intervention Group				
Dastolic Pre-Intervention Blood Pressure Results	12	95.00	7.977	0.001
Dastolic Blood Pressure Results Post Intervention		80.83	9.962	

Source: Primary Data, 2023

Variable	f	Mean	SD	Dependent T Test P = Value
Intervention Group				
Systolic Blood Pressure Results Pre-Intervention	12	164.17	13.790	0.001
Post-Intervention Systolic Blood Pressure Results		136.67	17.233	

Source: Primary Data, 2023

It is possible to conclude that prayer beads have an effect on lowering systolic blood pressure results in the intervention group based on table 6's statistical systolic blood pressure results of the Dependent T test for $p = 0.001$ ($p < 0.05$). Similar to the diastolic blood pressure findings, prayer beads had an impact on lowering diastolic blood pressure results in the intervention group, according to the Dependent T test statistical results for $p = 0.001$ ($p < 0.05$).

This is consistent with (Purnika, 2019) research. A greater decrease was observed in the intervention group ($p = 0.001$) with the title "The effect of dhikr mediation on changes in blood pressure in hypertensive patients in the internal room of Nene Mallomo Hospital, Sidenreng Rapang district." This suggests that dhikr mediation has an impact on changes in blood pressure in hypertensive patients.

The aforementioned findings are consistent with the hypothesis that one of the advantages of prayer beads therapy in Islam is that it promotes relaxation and stabilizes blood pressure. (Basyier, 2013). One method of relaxing that lowers blood pressure just as much as antihypertensive medications is using prayer beads. When smooth muscles in arteries and veins relax using relaxation techniques, the blood's norepinephrine levels drop. This lowers norepinephrine levels cause the heart to beat less vigorously in order to maintain blood pressure. (Chusna, 2015).

Table 7. Average Distribution of Systolic, Diastolic Blood Pressure Frequency Before and after which no prayer beads were carried out in the Control group at the Puskesamas Kramatwatu Serang -Banten in 2023 (n = 24)

Variable	f	Mean	SD	Dependent T test P = Value
Control Group				
Pre Control systolic blood pressure results	12	165.00	13.143	0.067
Post Control systolic blood pressure results		159.17	13.114	
Pre-Control Dastolic Blood Pressure Results	12	95.00	7.977	0.166
Post-Control Dastolic Blood Pressure Results		93.33	8.876	

Source: Primary Data, 2023

Based on table 7 of the Dependent T test statistical results for p = 0.067 (p < 0.05), it can be concluded that there is no effect on decreasing systolic blood pressure results in the control group. Likewise, the statistical results of the Dependent T test for the value of p = 0.166 (p < 0.05) can be concluded that there is no effect of decreasing systolic blood pressure results in the control group, these results occur because the control group has not carried out any intervention so that blood pressure results tend to no change

Table 8. Distribution of Bivariate Analysis Results Comparison of Systolic and Diastolic Blood Pressure after intervention in the Intervention and Control Group at the Kramatwatu Serang -Banten Health Center in 2023 (n = 24)

Variable	f	Mean	SD	Independent T Test P = Value
After				
Post-Intervention Systolic Blood Pressure Results	12	136.67	17.233	0.002
Post Control systolic blood pressure results		159.17	13.114	
Post Intervention Diastolic Blood Pressure Results	12	80.83	9.962	0.004
Post Control Diastolic Blood Pressure Results		93.33	8.876	

Source: Primary Data, 2023

It can be concluded that there are significant differences in systolic results between the intervention group of prayer beads and a control group that is not carried out by prayer beads based on the statistical test results in Table 8, which yielded a p value of 0.002. Additionally, statistical test results obtained a p value of 0.004 indicate that there is a significant difference between the intervention group of prayer beads and a control group that is not carried out by prayer beads.

This is consistent with (Nugroho, 2023) A greater decrease was observed in the intervention group (p = 0.001) with the title "The effect of dhikr mediation on changes in blood pressure in hypertensive patients at Nene Mallomo Hospital, Sidenreng Rapang district." This suggests that dhikr mediation has an impact on changes in blood pressure in hypertensive patients. Likewise, Lela Aini's (2020) study. The results of the study on the impact of dhikr relaxation therapy on blood pressure reduction in hypertensive patients at the Internal Medicine Polyclinic of Bayangkara Hospital Palembang indicated that the therapy was effective, with a dependent t test yielding a value of p = 0.001 less than alpha (0.05). In conclusion, there is the effect of dhikr relaxation therapy on lowering blood pressure in patients with hypertension.

The aforementioned findings are consistent with the hypothesis that one of the advantages of prayer beads therapy in Islam is that it promotes relaxation and stabilizes blood pressure. (Lestanti, 2023). One method of relaxing that lowers blood pressure just as much as antihypertensive medications is using prayer beads. Relaxation methods cause the smooth muscles in the veins and arteries to relax, which lowers blood norepinephrine levels. This lowers blood norepinephrine levels cause the heart to beat less vigorously in order to maintain blood pressure (Mills, 2019)

4. Conclusion

Based on the analysis and discussion of the data, it can be concluded that, on average, the results of estimating the total age of people with hypertension, both the control and intervention groups, the majority of these patients are aged 36-45 (Old Adults), the research from 24 respondents, the majority of respondents are male, and there are more men than women overall (there are 16 men and 8 women in the intervention and control groups). According to the study's findings, there were more participants who worked overall—11 people worked and 1 person did not work—between the intervention and control groups. The average difference in systolic and diastolic blood pressure reduction between the control intervention group and the results was significantly different, according to the data. Test statistics T Dependent for diastolic blood pressure results, p value = 0.001 ($p<0.05$), and Dependent T test statistics for systolic blood pressure results, p = 0.001 ($p<0.05$). In conclusion, prayer beads therapy significantly affects how well individuals with hypertension are able to control their blood pressure.

Acknowledgments

Acknowledgments to the Head of UNPAD Medical S3 Study Program, Head of Keramatwatu Health Center and its staff and Promoters and Co-Promoters for the support that has been given

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