

The Relationship between Tahajjud Prayer and the Prevalence of Hypertension in the Elderly in the Work Area of Puskesmas Kedai Durian

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ABSTRACT

Prayer or Salah in Islam is a religious activity that has many benefits as mentioned in Qur'an and Hadith, including health benefits. This could be achieved because of the nature of prayer that causes relaxation, activating the sympathetic and parasympathetic nervous systems which results in maintaining the stability of blood pressure level. In medical point of view, hypertension is still one of the most concerning health problems with rising risk of complications in elderly. This research aims to find the health benefits of one form of the prayer which is the Tahajjud prayer, and thus the relationship between Tahajjud prayer and hypertension in the elderly. To find out the relationship between Tahajjud prayer and the prevalence of hypertension in the elderly in the work area of Puskesmas Kedai Durian. The methods used in this research is analytical using the cross sectional design with the univariate analysis and bivariate analysis and the Spearman test. From the results of the interviews of the Tahajjud prayer, 5% of routine results, 46% routine, 27% less routine, 14% non-routine, 8% very routine, 8%. The groups of elderly that routinely perform Tahajjud prayer (VR & R) have better overall blood pressure level which can be seen in the number of normal blood pressure status than the group with less frequency of Tahajjud prayer (LR, NR, & VUR).

Keywords: Tahajjud Prayer, Hypertension, Elderly, Puskesmas, Relaxation

INTRODUCTION

Prayer or Salah in Islam, is a religious activity for every muslims that consists of physical, mental and spiritual aspect. There are many types of prayer in islam, but it can be divided roughly into two category which are: 1.) the obligatory five times prayer and 2.) the sunnah prayer (e.g. tahajjud prayer). It is mentioned in the Qur'an and Hadith that prayer has many benefits including health benefits. Prayer can cause relaxation response which develops healthiness and peace of mind. This could be achieved because prayer involves khusyuk (wholeheartedness), concentration of the mind, deep thinking and also body movement that can't be found in other type of relaxation methods.

Relaxation is a self-management technique can inhibit bodily stress and mental stress experienced by a person which results in maintaining the stability of the blood pressure, prevents it to rise or fall. Thus, relaxation will make a person's condition to be calm. It revolves around the function of the sympathetic and parasympathetic nervous system through the mechanism of autoregulation, reduction of blood pressure through a decrease in heart rate and TPR.

Until now, hypertension is still one of the most concerning health problems especially in the elderly. According to the World Health Organization (WHO) in 2008 around 972 million people or 26.4% of the population worldwide were affected by hypertension. This number is likely to increase to 29.2% in 2025. The total of people affected by hypertension worldwide is 972 million people, in which approximately 333 million people belong to the developed countries, and the remaining 639 million people are in developing countries, including Indonesia.

An elderly person, according to the World Health Organization (WHO), is defined as someone who has entered the age of 60 years and over, and has entered the final stage of his life phase. In this late life stage the overall functions of the body don't work as effectively as in midlife age, this involves many physiological systems including the cardiovascular system. Several studies has shown that as people age their blood pressure also become higher. This occur because the elasticity of the blood vessels's wall decreases with age, increasing the force of blood exertion against this wall and thus results in hypertension. To get the picture of hypertension occurrence in Indonesia, the data of people with hypertension in three age group in Indonesia have been documented and shows that around 45.9% people at the age of 55-64 years were affected by hypertension, 57.6% people age 65-74 years and 63.8% people age 75 years and above (Balitbang Kemenkes RI, 2013).

Hypertension is a condition that is often found in primary health care. Because of that, puskesmas in Indonesia as primary health care facilities have the responsibility to prevent hypertension from occurring by reducing its risk factors which can be done through health promotion. This start early from raising awareness and changing people's lifestyle to be healthier. Puskesmas also need to do primary prevention which is more emphasized in screening and early detection of hypertension. Ideally hypertension should be identified as early as possible so that the treatment can also start earlier to prevent many serious complications. If prayer proven to be beneficial to people with hypertension, then this health promotion and education about prayer should be done extensively to the group of muslim elderly people instead of only focusing in the generic patient education such as eating healthy food, exercise regularly and taking medication.

One research that describes the benefits of the midnight prayer is Awaluddin's, which shows that there is indeed a relationship between knowledge of prayer and the prayer itself on blood pressure in the elderly. Wardani, Nashori and Uyun's research also shows that the constant practice of prayer is effective in reducing hypertension in elderly.

So far, there has been no study that specifically address the Tahajjud prayer. The lack of this specific study motivates the authors to research on the relationship between Tahajjud prayer and the prevalence of hypertension in the elderly, and hopefully this would bring a meaningful result.

METHODS

The methods used in this research is analytical using the cross sectional design.

The samples are number of people that fulfilled the following inclusion criteria:

- a. Elderly: Age > 60 years.
- b. Muslim

Exclusion criteria :

- a. Elderly who are not willing to be a research sample

Samples were taken using consecutive sampling technique, with the sample size determined using the *Lemeshow* formula, namely:

$$n = \frac{Za^2PQ}{d^2}$$

Information :

n = minimum sample size

Za^2 = standard normal distribution value at a certain 'a'. In this study the desired level of confidence is 95% so the value is 1.96.

P = the price of proportion was populated in this study.

d = the desired level of accuracy, in this study taken 0.10.

If it's a type 1 error = 5 %, P = 45,9 %, Q = 1 - P, dan d = 10 %

$$n = \frac{(1,96)^2 \times 0,459 \times 0,541}{0,10^2}$$

$$= 95,3$$

Thus, the sample size for this study was 95.3 (rounded to 100).

From this calculation, the minimum number of samples needed in this study is 100 people.

Data Analysis

Analysis of this study uses univariate analysis and bivariate analysis with the Spearman test. Univariate analysis is used to provide a general description of the research results, such as age, average blood pressure, BMI, and the routine performing of Tahajjud prayer. Bivariate analysis was performed to determine the relationship between Tahajjud prayers and the prevalence of hypertension in the work area of Puskesmas Durian. The hypothesis test that will be used is the *Spearman* test with a 95% confidence level or significance limit ($\alpha = 0.05$). If the result of the table shows a significant value (p-value) <0.05 then H_0 is accepted, meaning that there is a relationship between the Tahajjud prayer and the prevalence of hypertension in the elderly in the work area of Puskesmas Kedai Durian. Conversely, if (p-value) > 0.05 then H_0 is rejected, meaning that there is no relationship between Tahajjud prayer and the prevalence of hypertension in the elderly in the working area of Puskesmas Kedai Durian.

RESULTS AND DISCUSSION

Research shows that the majority of respondents aged 65 years (16%), suffer most from stage 1 hypertension, which affect 32 people (32%), the most elderly have normal BMI (66%). The interview of the Tahajjud prayer routinuity in elderly shows 5% very routine (VR), 46% routine (R), 27% less routine (LR), 14% not routine (NR), and 8% very unroutine (VUR).

Tabel 1. Frequency distribution of respondents based on demographic data

Characteristic (Age)	Frequency (n)	Percentage (%)
60 years old	12	12%
61 years old	11	11%
61 years old	13	13%
63 years old	11	11%
64 years old	5	5%
65 years old	16	16%
66 years old	7	7%
67 years old	6	6%
68 years old	5	5%
69 years old	4	4%
70 years old	1	1%
71 years old	2	2%
72 years old	2	2%
73 years old	2	2%
74 years old	1	1%
75 years old	1	1%
86 years old	1	1%

Average Blood Pressure	Frequency (n)	Percentage (%)
Normal	29	29%
Pre-Hypertension	23	23%
Hypertension Stage 1	32	32%
Hypertension Stage 2	16	16%

Body Mass Index (BMI)	Frequency (n)	Percentage (%)
Underweight	3	3%
Normal	66	66%
Overweight	16	16%

Obese 1	12	12%
Obese 2	2	2%
	1	1%

Table2. Frequency distribution of the number of respondents on each question routine prayer tahajjud

Routine level	Frequency (n)	Percentage (%)
Very Routine	5	5%
Routine	46	46%
Less Routine	27	27%
Not Routine	14	14%
Very Unroutine	8	8%

The relationship between the independent variable (Tahajjud prayer) with the dependent variable (blood pressure), if the value of $p < 0.05$ then H_0 is accepted so that there is a significant relationship between the independent variable and the dependent variable.

The cross tabulation of the relationship between Tahajjud prayer and the prevalence of hypertension in the work area of Puskesmas Kedai Durian can be seen in the following table.

Tabel 3. The Relationship between Tahajjud Prayer and the Prevalence of Hypertension in the Elderly in the Work Area of Puskesmas Kedai Durian

Groups of Elderly according to the Routinity of Tahajjud Prayer	Number of Elderly according to Average Blood Pressure				Total
	Normal	Pre-hypertension	Hypertension Stage 1	Hypertension Stage 2	
Very Routine (VR)	4	0	1	0	5
Routine (R)	18	14	9	5	46
Less Routine (LR)	6	6	10	5	27
Not Routine (NR)	1	2	6	5	14
Very Unroutine (VUR)	0	1	6	1	8
Total	29	23	32	16	100

Tabel 4. Correlations

		the routine of the Average Blood
		Tahajjud Pressure
Spearman's rho	The Routinity of Tahajjud Prayer	Correlation Coefficient 1.000 Sig. (2-tailed) . N 100
	Average Blood Pressure	Correlation Coefficient .427** Sig. (2-tailed) .000 N 100

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3 describes the categorization of 5 different elderly group according to the routinity of their Tahajjud prayer and their blood pressure condition. The 1st sample group, VR (very routine), have a total of 5 samples which consist of 4 samples with normal blood pressure and 1 sample that suffers from stage 1 hypertension. The 2nd sample group, R (routine) have a total of 46 samples, where 18 samples have normal blood pressure, 14 samples suffer from pre-hypertension, 9 samples suffer from stage 1 hypertension, and 5 samples suffer from stage 2 hypertension. The 3rd sample group, LR (less routine) with total of 27 samples, consist of 6 samples that have normal blood pressure, 6 samples suffer from pre-hypertension, 10 samples suffer from stage 1 hypertension and 5 samples suffer from stage 2 hypertension. The 4th sample group, NR (not routine) with total of 14 samples, 1 sample has normal blood pressure, 2 samples suffer from prehypertension, 6 samples suffer from stage 1 hypertension and 5 samples suffer from stage hypertension 2. The 5th sample

group, VUR(very unroutine) with total of 8 samples, 1 sample suffers from pre-hypertension, 6 samples are in stage 1 hypertension and 1 sample is stage 2 hypertension.

Based on the results of the Spearman test, the distribution frequency of Tahajjud prayers and blood pressure values is $p = 0.0001$ where the value of $p < 0.05$. meaning that H_0 is accepted. This result prove that there is a significant relationship between Tahajjud prayer and hypertension in the elderly.

DISCUSSION

Based on the number of samples taken, it was found that the routinuity of Tahajjud prayer for the elderly in the work area of Puskesmas Kedai Durian varies greatly. The difference in each sample group performing the Tahajjud also affects the blood pressure in the elderly as shown in table 3.

It is to be noted that 4 of 5 of the 1st sample group (VR), which very routinely performing the Tahajjud prayer have normal blood pressure where only 1 sample has hypertension. In contrast to the VR group, the 5th group which performed Tahajjud prayer very un routinely (VUR), all of the 8 samples were suffering from hypertension and none of the samples have normal blood pressure. Also the less frequent the samples perform Tahajjud prayer, the more unstable their blood pressure level.

This is in accordance with theories, which states that prayer indeed beneficial in the health of the elderly. In this context the Tahajjud prayer plays a big role to the blood pressure if done routinely. The Tahajjud prayer is done in the middle of the night where people normally sleeps. It concentrates the mind, deep thinking and body movements that are not usually done in normal conventional relaxation. But the specific variable that enables the activation of the nervous systems must be investigated even further, whether it's the concentration, the movement, or other possible variables.

To reflect with other similar research, Diyono and Syiam Khotimah Musnidawati studied the relationship between the intensity of the midnight prayer with blood pressure. The result shows the effect of the midnight prayer on blood pressure with a p value of 0.001 (< 0.05). Other research is conducted by Hanik Fitria Cahyani regarding the relationship of prayer to blood pressure in hypertensive patients in Posbindu Aggrek with the result of a significant relationship between prayer with systole blood pressure and diastolic blood pressure in hypertensive patients in Posbindu Anggrek where the Systolic Blood Pressure p value = 0,000 (< 0.05) and at Diastolic Blood Pressure $p = 0.023$ (< 0.05).

CONCLUSION

From the result of this research with two supportive research results above, it can be concluded that there is a significant relationship between tahajud prayer with blood pressure

Based on the results of this research and discussion in the previous section, conclusions can be drawn regarding the relationship between tahajud prayer and the prevalence of hypertension in the elderly in the work area of Puskesmas Kedai Durian as follows:

1. There is a significant relationship between Tahajjud prayer and the prevalence of hypertension in the elderly in the work area of Puskesmas Kedai Durian
2. The groups of elderly that routinely perform Tahajjud prayer (VR & R) have better overall blood pressure level which can be seen in the number of normal blood pressure status than the group with less frequency of Tahajjud prayer (LR, NR, & VUR).

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