

Sleep Quality of Hypertensive Patients can be Influenced by the Effectiveness of Back Massage

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Abstract

Background: Hypertension has an impact on cardiovascular disease which can cause death. One of the factors that affect blood pressure is sleep disorders.

Objectives: This study aims to determine the effectiveness of back massage on the sleep quality of hypertensive patients

Methods: The design of this study used quasi-experimental research (Quasi Experiment). The population of this study was hypertensive patients in the Rumkital Inpatient Room, Dr. Mintohardjo. The sample in this study was 20 respondents. This research instrument uses a standard instrument, namely the Sleep Quality Questionnaire. This study uses the Paired Sample T-Test. This research uses the IBM SPSS statistic 24 in the data processing. Data analysis in this study was carried out bivariate.

Results: The characteristics of most respondents are female by 13 (65%), final age (56-65 years) by 12 (60%), sleep satisfaction before being given a back massage by 13 (65%), sleep satisfaction after being given a back massage by 14 (70%). The results of statistical tests obtained P-Value = 0.000.

Conclusion: There is an effect of the effectiveness of the back massage on the sleep quality of hypertensive patients.

Keywords: back massage, hypertension, sleep quality

Introduction

Hypertension in the elderly is a condition when a person experiences an increase in blood pressure above normal or a systolic pressure higher than 140 mmHg and diastolic pressure above 90 mmHg. WHO states that the prevalence of hypertension is expected to continue to increase, and it is predicted that by 2025 as many as 29% of adults worldwide suffer from hypertension. Overall, high-income countries have lower rates of hypertension than low- and middle-income countries. Patient prevalence of Hypertension in Indonesia is included in the top 10 most diseases of the elderly in 2013, the age group 55-64 years as much as 45.9%, age 65-74 years as much as 57.6%, and age 75 years and over 63.8%.¹

The number of elderly hypertension sufferers in Indonesia reaches 35.9% of the total elderly population with an age range of over 55 years. The number of male patients reached 52.7% while 47.3 were women. The highest prevalence of hypertension in the elderly in

Indonesia occurs in the province of South Kalimantan at 39.6% and the lowest was in West Papua at 20.1%. Hypertension is responsible for increased morbidity and mortality in the elderly population. Complications of hypertension cause 45% of deaths from heart disease and 51% of deaths due to stroke in the elderly. Hypertension in the elderly is the third leading cause of death after stroke and tuberculosis, which is 6.7% of the elderly population in Indonesia.²

Sleep Quality of Hypertensive Patients can be Influenced by the Effectiveness of Back Massage One factor affecting blood pressure is sleep disorders. Sleep disorders are a collection of conditions characterized by disturbances in the amount, quality, or time of sleep of an individual. Individuals who experience sleep disorders will have a higher risk of developing hypertension than individuals who do not have sleep disorders.³ In general, the problems experienced by hypertensive patients are physical and psychological. Psychological problems experienced include depression, delirium, panic symptoms, and anxiety. Physical problems that are often experienced include hypotension, pain, impaired fluid balance, pruritus, malnutrition, cramps and fatigue, and sleep disturbances. Sleep quality in terms of the fulfillment of the amount and quality needed it affects the daily activities of individuals. Sleep disturbances also hurt physical and mental health and can affect the patient's appearance such as cognitive dysfunction and memory.⁴

Sleep disturbances in hypertensive patients affect sleep quality in terms of the amount or length of sleep achieved. Good quality sleep can give you a feeling of calm and refreshment in the morning, feeling energetic, and not complaining of sleep disturbances. In other words, good quality sleep is very important and vital for everyone to live a healthy life.⁵ Sleep quality is a person's subjective report of satisfaction and their sleep needs are met so that they do not show fatigue during activities during the day, are susceptible to disease, lethargy, look black in the eye circles, swollen eyelids, reddened conjunctiva, sore eyes, difficulty concentrating, headaches and frequent yawning, or drowsiness. Quality Patient sleep can be assessed quantitatively and qualitatively. Sleep quality is assessed from the length of sleep, the time it takes to start sleeping, and the frequency of waking at night, while qualitatively, sleep quality is assessed from the depth of sleep, deep sleep, and feeling when you wake up in the morning.⁶

There are several techniques to overcome poor sleep quality, such as complementary/alternative drugs, herbal supplements, behavioral interventions such as relaxation therapy, and pharmacological therapy.⁷ Meanwhile, according to Retno, there are very effective and very simple actions to overcome poor sleep quality, namely by doing back massage therapy.⁸ Massage or massage is an action that has been perfected with the sciences of mechanical hand movements against the human body with various techniques. Back massage therapy is a healing effort that is safe, effective, and without harmful side effects, and can be carried out by health workers and other people who have been equipped with back massage knowledge.⁹

Back massage therapy can increase client comfort and relaxation and has a positive effect on cardiovascular parameters such as blood pressure, heart rate, and respiratory rate. Massage has many benefits on the human body system such as reducing muscle pain in the cardiovascular system, can increase circulation and stimulating blood flow throughout the body, can also stimulate skin cell regeneration, and help in the body's barrier, and its effect on the nervous system can reduce the risk of sleep quality disorders.¹⁰

Zulmi's research results state that back massage has a significant effect on sleep quality because the therapy can produce a relaxation response that makes the body relax and feel comfortable when entering rest or bedtime. Researchers recommend back massage to be included in activities in the place where the research was conducted because back massage is a stimulus to improve sleep quality.¹¹

Based on the results of a preliminary study at Rumkital Dr. Mintohardjo, it was known that based on the results of interviews with 5 hypertension patients, it was found that 3 out of 5 hypertension patients experienced poor sleep quality such as unsatisfied sleep at night, insomnia, waking up in the middle of the night, etc. The purpose of this study was to determine the effectiveness of back massage on the sleep quality of hypertensive patients.

Methods

The design of this study used quasi-experimental research (Quasi Experiment). The population of this research is hypertensive patients in the Inpatient Rumkital Dr. Mintohardjo. The sample in this study was 20 respondents. This research instrument uses a standard instrument, namely the Sleep Quality Questionnaire (KKT). This study uses the Paired Sample T-Test. This research uses IBM SPSS statistic 24 for data processing. Data analysis in this study was carried out bivariate.

Sleep Quality of Hypertensive Patients can be Influenced by the Effectiveness of Back Massage. This research has been conducted an ethical test at the ethical research institute of the Advanced Indonesian Health Sciences College (STIKIM) and this research has successfully passed the ethical clearance with the number: 2910/Sket/Ka-Dept/RE/STIKIM/XI/2021.

Results

Table 1. Distribution of Respondents' Characteristics Based on Gender and Age (N=20)

Characteristics	Frequency	Percentage (%)
Age		
Late Elderly (56-65 years)	12	60,0
Early Elderly (46-55 years old)	6	30,0
Seniors (> 65 Years)	2	10,0
Gender		
Male	7	35,0
Female	13	65,0

Based on table 1, the results of this study show the characteristics of respondents based on the age of the respondents, it is known that age is more in the category of late elderly (56-65 years) as many as 12 respondents (60%). Characteristics of respondents based on gender, it is known that there are more females sex as many as 13 respondents (45%).

Table 2. An Overview of Sleep Quality Based on Sleep Quality Meters Before Giving Back Massage Hypertensive Patients (N=20)

Sleep Parameters	Frequency (f)	Percentage (%)
Time to Start Sleeping		
> 60 minutes	6	30%
31-60 minutes	14	70%
16-30 minutes	0	0%
< 15 minutes	0	0%
Total Hours of Sleep at Night		
< 5 Hours	0	0%
5-6 Hours	10	50%
>6-7 Hours	5	25%
>7 Hours	5	25%
Wake up Frequency		
5 times	5	25%
3-4 times	10	50%
1-2 times	5	25%
none	0	0%

Sleep Depth		
Very Sleepy	4	20%
Sleepy	11	55%
A little Sleepy	5	25%
Feel fresh and not sleepy	0	0%
Sleep Satisfaction		
Not very Soundly at all	0	0%
Sleeping but waking up often	13	65%
Sleeping but not getting enough	7	35%
Very restful	0	0%
Fresh Feeling Wake Up in the Morning		
Not feeling satisfied	0	0%
Slightly satisfied	15	75%
Quite satisfied	5	25%
Very satisfied	0	0%
Sleep During the Day		
None	0	0%
Less than 1 Hour	14	70%
1-2 Hours	6	30%
2 hours or more	0	0%

Based on table 2 the results of this study show that the highest frequency of time to start sleeping is 31-60 minutes for as many as 14 people (70%), total hours of sleep at night is 5-6 hours as many as 10 people (50%), the frequency of waking is 3-4 times as much 10 people (50%), sleep depth is 11 people (55%), sleep satisfaction is sleeping but often wakes up as many as 13 people (65%), feeling fresh waking up in the morning is a little satisfied as much as 15 people (75%), and daytime sleep is less than 1 hour as many as 14 people (70%).

Table 3 Overview of sleep quality based on sleep quality meters after being given a back massage Hypertensive Patients (N=20)

Sleep Parameters	Frequency (f)	Percentage (%)
Time to Start Sleeping		
> 60 minutes	0	0%
31-60 minutes	6	30%
16-30 minutes	14	70%
< 15 minutes	0	0%
Total Hours of Sleep at Night		
< 5 Hours	0	0%
5-6 Hours	5	25%
>6-7 Hours	10	50%
>7 Hours	5	25%
Wake Up Frequency		
5 times	2	10%
3-4 times	3	15%
1-2 times	12	60%
none	5	25%
Sleep Depth		
Very Sleepy	0	0%
Sleepy	4	20%
A little Sleepy	11	55%
Feel fresh and not sleepy	5	25%
Sleep Satisfaction		
Not very Soundly at all	0	0%
Sleeping but waking up often	0	0%
Sleeping but not getting enough	14	70%
Very restful	6	30%
Fresh Feeling Wake Up in the Morning		
Not feeling satisfied	0	0%

Slightly satisfied	10	0%
Quite satisfied	17	85%
Very satisfied	3	15%
Sleep During the Day		
None	0	0%
Less than 1 Hour	0	0%
1-2 Hours	14	70%
2 hours or more	6	30%

Based on table 3 the results of this study show that the highest frequency of time to start sleeping is 16-30 minutes as much as 14 people (70%), and the total hours of sleep at night are >6-7 hours as many as 10 people (50%), the frequency of waking is 1-2 times as much as 12 people (60%), sleep depth is a little sleepy as many as 11 people (55%), sleep satisfaction is sleeping but not getting enough sleep as many as 14 people (70%), feeling refreshed early in the morning is quite satisfied as much as 17 people (85%), and sleep during the day is 1-2 hours as many as 14 people (70%).

Table 4. Effectiveness of Back Massage on Sleep Quality of Hypertensive Patients (N=20)

Kualitas Tidur	N	Mean Differences	t	P-value
Pretest-Posttest	20	6,95	51,391	0,000

Based on table 4, the results of this study indicate that the quality of sleep seen from the Mean Differences value is 6.95, meaning that it is positive, then there is a tendency to decrease the value of sleep quality. The results of the statistical test showed that the p-value of 0.000 means $P < 0.05$, it can be concluded that there is the effectiveness of back massage on the sleep quality of hypertension patients in the Rumkital Inpatient Room Dr. Mintohardjo.

Discussion

Distribution of Respondents' Characteristics

Based on the results of the characteristics of the respondents Based on the age of the respondents, it is known that the age group is more in the late elderly category (56-65 years) as many as 12 (60%). Characteristics of respondents based on gender, 13 (45%). This study is in line with the research of Isroul Azhar, the majority of hypertensive patients are in the late elderly age group (30.2%) and the female gender is more than the male (56.6%).¹² 60-65 years (38%) and the majority are women (62%).¹³ This is by the theory that age affects the risk of cardiovascular disease because age causes changes in the heart and blood vessels. Blood pressure increases with age because arteries slowly lose their elasticity. With increasing age, the symptoms of arteriosclerosis are more visible and this supports an increase in total peripheral resistance and can cause hypertension, hypertension does not always occur in old age, but based on age groups, the graph of the average increase in blood pressure follows the increase in the average age. In men, hypertension occurs at the age of > 55 years, and in women, it occurs at the age of > 65 years. Women's risk increases after experiencing menopause.¹⁴

From the results of research conducted by researchers and the results of related studies, it can be concluded that the more people age, the more susceptible a person is to hypertension. Especially in the female gender who have a higher risk of experiencing hypertension because the risk of women increases after experiencing menopause.

Overview of Sleep Quality Before Giving Back Massage to Hypertensive Patients

Based on the results of the study, it is known that the highest frequency of time to start sleeping is 31-60 minutes for as many as 14 people (70%), total hours of sleep at night is 5-6 hours as many as 10 people (50%), the frequency of waking up is 3-4 times as many as 10 people. people (50%), sleep depth is 11 people (55%), sleep satisfaction is sleeping but often

wakes up as many as 13 people (65%), feeling fresh waking up in the morning is a little satisfied as many as 15 people (75%), and Sleeping during the day is less than 1 hour as many as 14 people (70%). This study is in line with Putri's research, it is known that the results of this study generally reported that the time to start sleeping was 30-60 minutes for as many as 27 elderly (34%), a total of 5-6 hours of sleep as many as 36 elderly (46%), waking up at night 3-4 times as many as 35 elderly (44%), the depth of sleep the majority of respondents answered falling asleep but not sleeping well as many as 35 elderly (44%), feeling a little satisfied with their sleep at night as many as 35 elderly (44%), feeling refreshed in the morning as many as 41 elderly answerings slightly sleepy (52%), and feeling sleepy during the day who answered a little sleepy as many as 33 elderly (42%).¹³ This study is also in line with Erna Melastuti's research. sleep time (sleep latency) most respondents started sleeping > 60 minutes (52.9%) as many as 9 respondents.¹⁵

Frequency of waking up at night (58.8%) waking up at night 3-4 times a total of 10 (58.8%), the highest percentage of total hours of sleep < 5 hours (52.0%) as many as 9 respondents. There were 12 respondents (70.6%) complaining about not sleeping well and 14 respondents complaining about sleep satisfaction (82.4%). Feeling tired during daytime activities as many as 14 respondents (82.4%).¹⁵

The theory is that someone who is sick needs more sleep than normal. Very often in sick people, their sleep patterns will also be disturbed because of the disease, such as pain caused by wounds. Respiratory diseases such as emphysema, asthma, bronchitis, rhinitis, and allergies can change the rhythm of breathing and interfere with sleep. Coronary heart disease is often characterized by sudden episodes of chest pain and an irregular heartbeat, this can lead to frequent awakenings and changes in stages during sleep.¹⁶

From the results of research conducted by researchers and the results of related studies, it can be concluded that a patient suffering from hypertension will have disturbed sleep patterns. Sleep disturbances in hypertensive patients affect sleep quality in terms of the amount or length of sleep achieved. Individuals who experience sleep disorders will have a higher risk of developing hypertension than individuals who do not have sleep disorders.

Overview of Sleep Quality After Giving Back Massage to Hypertensive Patients

Based on the results of the study, it is known that the highest frequency of time to start sleeping is 16-30 minutes as many as 14 people (70%), and total hours of sleep at night is >6-7 hours as many as 10 people (50%), the frequency of waking is 1-2 times as many as 12 people (60%), Depth of sleep is Slightly sleepy as many as 11 people (55%), sleep satisfaction is Sleeping but not quite well as much as 14 people (70%), Feeling refreshed in the morning is Fairly satisfied as much as 17 people (85%), and Sleeping during the day is 1-2 hours as many as 14 people (70%). This study is in line with Erna Melastuti's research, it is known that the results after being given therapy (post-test) showed that the majority of respondents started falling asleep (sleep latency) for less than 5-30 minutes (35.3%) and woke up 1-2 times at night (47.1%). Most of the respondents got a total of 5-6 hours of sleep (47.1%), felt refreshed when they woke up in the morning (52.9%), and slept very well (58.8%). Respondents got moderate sleep satisfaction (52.9%) and did not feel tired during daytime activities (52.9%).¹⁵

This is by the theory that the problems experienced by hypertensive patients are physical and psychological. Psychological problems experienced include depression, delirium, panic symptoms, and anxiety. Physical problems that are often experienced include hypotension, pain, fluid balance disorders, pruritus, malnutrition, cramps and fatigue, and sleep disturbances. sleep quality in terms of the fulfillment of the amount and quality needed affects the daily activities of individuals. Sleep disturbances also have a negative impact on physical

and mental health and can affect the patient's appearance such as cognitive and memory dysfunction.⁴ There are several techniques to overcome poor sleep quality such as complementary/alternative medicine, herbal supplements, behavioral interventions such as relaxation therapy, and pharmacological therapy⁷. According to Retno, there is very effective and very simple action in overcoming poor sleep quality, namely by doing back massage therapy.⁸

From the results of research conducted by researchers and the results of related studies, it can be concluded that with back massage therapy the quality of sleep is better. Because back massage therapy can increase client comfort and relaxation and have a positive effect on cardiovascular parameters such as blood pressure.

The Effectiveness of Back Massage on the Sleep Quality of Hypertensive Patients

Based on the results of the study, it is known that the quality of sleep seen from the Mean Differences value is 6.95, meaning that it is positive, then there is a tendency to decrease the value of sleep quality. The results of the statistical test showed that the p-value of 0.000 means $P < 0.05$, it can be concluded that there is the effectiveness of back massage on the sleep quality of hypertension patients in the Rumkital Inpatient Room, Dr. Mintohardjo. This study is in line with Melastuti's research. Results After the paired t-test was carried out on respondents before and after being given slow stroke back massage therapy, the sig value was .001 ($p < 0.05$) and the t-value was -14,736 with a mean difference before and after being given therapy amount of -11.18 based on the total mean before therapy was 11.06 (SD 1.600) and the total mean after therapy was 22.24 (SD 2.905) In conclusion, there was a significant or significant difference between sleep quality before and after being given slow stroke back massage therapy. In line with Zulmi's research, which states that back massage has a significant effect on sleep quality because the therapy can produce a relaxation response that makes the body relax and feel comfortable when entering rest or bedtime. In this study, researchers recommended back massage be included in activities in the place where the research was carried out because the back massage was a stimulus to improve sleep quality.¹²

Theoretically, back massage therapy can increase client comfort and relaxation and have a positive effect on cardiovascular parameters such as blood pressure, heart rate, and respiratory frequency. Massage has many benefits on the human body system such as reducing muscle pain in the cardiovascular system, can increase circulation and stimulating blood flow throughout the body, can also stimulate skin cell regeneration, and help in the body's barrier, and its effect on the nervous system can reduce the risk of sleep quality disorders.¹⁰

From the results of research conducted by researchers and the results of related studies, it can be concluded that one of the factors that affect blood pressure is sleep disorders. Individuals who experience sleep disorders will have a higher risk of developing hypertension than individuals who do not have sleep disorders. For this reason, therapy is needed to reduce sleep problems, namely Back Massage. Therapy to reduce sleep disturbances and get good sleep quality so that hypertensive patients can quickly lower their blood pressure to normal.

Conclusion

Based on the research that has been done on the effectiveness of back massage on the sleep quality of hypertension patients in the Rumkital Inpatient Room Dr. Mintohardjo, it can be concluded that there is an effect of the effectiveness of back massage on the sleep quality of hypertension patients. It is expected that hypertensive patients can apply back massage therapy for 10 minutes to get good sleep quality.

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