



**THE EFFECT OF BACKRUB ON SLEEP PATTERNS AND STRESS LEVELS  
IN HYPERTENSION CLIENTS**

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**ABSTRACT**

Currently, non-communicable diseases are increasing, one of which is hypertension. The Household Health Survey (SKRT) report shows that hypertension always ranks as the first cause of death with an increasing percentage of causes of death. In addition to heredity, some hypertensive clients experience unhealthy psychosocial conditions, such as stress and sleep patterns (insomnia). Objective to determine the effect of backrub massage on stress levels and sleep patterns in hypertensive clients in the Bogor City Health Center area Method: This study used a quasi-experimental research design with control group design, with a sample of 60 clients with hypertension. Effect of backrub massage using Independent T test. The results of the Backrub Massage intervention on sleep patterns showed that the T test results were obtained  $P = 0.07$  so there was no significant difference. The results of the Backrub Massage intervention on stress obtained T test results  $P = 0.008$  so that there is a difference in stress before and after the backrub massage. Backrub massage is a non-pharmacological therapy that improves blood circulation and reduces stress levels. The results of this study are very relevant to the theory and results of other studies, namely a decrease in stress levels in hypertensive clients.

**Keywords:** backrub massage; hypertension; sleep pattern; stress

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**INTRODUCTION**

Hypertension is a non-communicable disease but a very serious disease. In Indonesia, heart and vascular disease is one of the biggest causes of death which continues to increase every year (Health Research and Development Agency, Ministry of Health of the Republic of Indonesia, 2013). As a result of hypertension complications, the quality of life of sufferers is low and the worst possibility is the occurrence of death in patients due to hypertension complications they have (Setyawan, 2017). Of the 600 million people with hypertension worldwide, there are three million sufferers who die. According to (World Health Organization 2010) 40% of developing countries have hypertension, 46% of people with hypertension in African countries, 36% of people with hypertension in Southeast Asia, and the incidence of hypertension is 35% in America. (Ministry of Health RI 2018) revealed that in Indonesia the incidence rate obtained through measurements at the age of > 18 years was 25.8%. The prevalence of undiagnosed hypertension reached 63.8%. West Java is the fourth largest in the prevalence of hypertension in Indonesia, which is 29.40%. The incidence of hypertension in Bogor City is slightly lower than West Java data of 29.4%, while in Bogor City it is 28.4%. The results of the study (Sirait and Riyadina 2013) in Bogor City showed

that the incidence of hypertension in one year was 16.8%. According to (Dalimartha S, Purnama BT, Sutarina N, Mahendra B 2008) the high prevalence of hypertension, the risk of increasing dangerous complications if not treated quickly such as coronary heart disease, heart failure, damage to blood vessels in the brain, kidney failure and even death. Hypertension requires lifelong treatment, this can cause anxiety and various other psychosocial problems.

The psychosocial problems of clients with hypertension are anxiety, stress, sleep disturbances (insomnia) even if they are not resolved depression will occur. (Remmes 2012) also explains that sleep disturbances (insomnia) will exacerbate medical and psychiatric disorders such as hypertension, coronary or brain blood vessels, obesity and depression. Stress also often occurs in clients with hypertension caused by dependence on antihypertensive drugs throughout life. One of the psychosocial problems is stress. Stress is the body's non-specific response to any of it. For example, how does the body respond to someone who is experiencing excessive workload. (Hawari 2011) says, if he is able to handle it, it means that there is no interference with the function of the body's organs, then the person concerned does not experience stress, but on the contrary, if it turns out that he is experiencing disturbances in one or more organs of the body so that the person concerned is no longer able to carry out his job functions properly then he is called experiencing stress. Strong emotional state and intense stress that continues for a long time will become a somatic reaction that directly affects the circulatory system so that it can affect the heart rate and circulatory system. (Udani 2016) said that the benefits of massage pressure send signals that balance the nervous system or release chemicals such as endorphins to reduce pain and stress so as to cause or encourage a feeling of relaxation and improve blood circulation. The results of the study (Udani 2016) also suggest that reflexology massage has a good effect for people with hypertension, namely causing a decrease in blood pressure. This certainly reduces stress levels and provides a sense of comfort to the client so that sleep patterns are better.. Massage is carried out for 7 consecutive days (Etri Yanti, Dwi Christina R, Eliza A (2018). The results of the study (Ningsih and Yuliastati 2018) conclude that research on applying back rub can be one of the interventions that nurses can make to reduce anxiety and improve quality of children's sleep during hospitalization.

## **METHOD**

The research design used the Quasi experimental method with control group design. The research was conducted in three stages, the first stage was the preparation of proposals and ethical clearance, then the second stage was measurement, where the selected clients were clients who had degree I hypertension, namely if the blood pressure was over 140/100 and stage 2 hypertension was if the blood pressure was > 160/100, then measuring sleep disturbances and stress levels in hypertensive clients who attended Posbindu. The third stage was the backrub intervention, where before the intervention was carried out, a pre-test was carried out first, then the researcher intervened through 6 backrub massage exercises, gave a break for 2 weeks and continued with a post-test about backrub. The study was conducted in 2 sub-districts as intervention and 2 sub-districts as control, which was conducted from March 4 2020 to December 2020 with a total sample of 60 people with inclusion criteria for clients with hypertension types I and II, hypertensive clients with sleep disturbances, clients who are willing to become respondents, can read and write and male and female gender, while for exclusion criteria are clients who experience complications due to hypertension.

**RESULTS**

Table 1.  
Distribution of Characteristics of Hypertensive Clients with Sleep Disorders and Stress  
In the Intervention and Control Group in Bogor City (n=60)

Characteristics	intervention Group		Control Group	
	f	%	f	%
Gender				
Male	7	17,5	12	60
Female	33	82,5	8	40
Ethnic Group:				
Sunda	35	87,5	15	75
Jawa	3	7,5	4	20
Sumatra	1	2,5	1	5
Bali	0	0	0	0
Kalimantan	0	0	0	0
Sulawesi	1	2,5	0	0
Employment:				
Work	38	95	18	90
No Working	2	5	2	10

Based on table 2, it was found that most of the respondents in the intervention group were women (82.5%) while those in the control group were men (60%). Almost all of the ethnic groups of the respondents in the intervention group were Sundanese (87.5%) and most were still working (95%).

Table 3.  
Stress Levels and Sleep Patterns of Clients with Hypertension  
in the Pre Backrub Massage Intervention Group in Bogor City (n = 60)

Variabel	f	%
Stres Level		
a. No Stres	5	25,0
b. Mild Stres	14	70,0
c. Moderate Stres	1	5,0
d. Severe Stres	0	0
Sleep Pattern:		
a. No Sleep Disturbance	10	50,0
b. There is a sleep disorder	10	50,0

Based on table 3, it was found that half of the sleep quality of clients with hypertension in the intervention group before the intervention experienced sleep disturbances (50%) and most of them experienced mild stress (70%).

Table 4.  
Stress Levels and Sleep Patterns of Clients with Hypertension  
in the Post Backrub Massage Intervention Group in Bogor City (n=60)

Variabel	f	%
Stres Level		
a. No Stres	12	60,0
b. Mild Stres	6	30,0
c. Moderate Stres	2	10,0
d. Severe Stres	0	0
Sleep Pattern:		
c. No Sleep Disturbance	11	55,0
d. There is a sleep disorder	9	45,0

Based on table 4, it was found that more than half of the sleep quality of clients with hypertension in the intervention group before the intervention experienced sleep disturbances (55%) and more than half who did not experience stress (60%).

Table 5.  
Distribution of Average Sleep Patterns in Hypertension Clients  
No Intervention in Bogor City (n=60)

Control	Mean	SD	P value
No distractions	1,0	0,000	0,0000
There is a breakdown	1,7	0,4	

Based on table 5, it was found that the average sleep quality of clients with hypertension who had no intervention had sleep disturbances (1.7 ) compared to those who did not experience sleep disturbances (1.0).

## DISCUSSION

Backrub massage or back massage is a complementary therapy that is very useful for providing a sense of comfort for clients with hypertension, namely sleep disturbances and stress. Massage has many benefits to the human body systems such as reducing muscle pain in the cardiovascular system, can increase circulation and stimulate blood flow throughout the body, can also stimulate skin cell regeneration and help in the body's barrier, as well as its effect on the nervous system can reduce the risk of sleep quality disorders (Setyohadi 2011). Clients with hypertension have complaints of pain in the neck to the upper back, and this will disrupt the client's sleep pattern. In addition, psychosocial conditions in hypertensive clients can cause several health problems, one of which is insomnia (sleep disturbance), therefore it is one of the reasons researchers conduct research with bacrub massage on hypertensive clients. Research conducted by (Achyar 2019) shows that there is a significant correlation between psychosocial status in elderly hypertension and cases of insomnia. The elderly can improve their quality of life and avoid psychosocial problems to prevent health problems such as insomnia. There is a relationship between sleep quality and blood pressure in hypertensive patients with a relationship strength value of 0.65.

## CONCLUSION

The majority of respondents with poor sleep quality will have an increase in blood pressure, so it is necessary to provide counseling and assistance to people with hypertension. (Alfi and Yuliwar 2018). A person's poor sleep quality or having short sleep duration habits also has a relationship with an increase in a person's blood pressure. Bad sleep patterns if they occur for years are very dangerous and may occur such as heart attacks, strokes, to severe psychological problems.

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## REFERENCES

- A.Mutaqqin. 2009. *Pengantar Asuhan Keperawatan Klien Dengan Gangguan Sistem Kardiovaskular*. Jakarta: Salemba Medika.
- Achyar, Khamidah. 2019. "IBM Pada Kader Aisyiyah Ranting Pamijen Kecamatan Sokaraja Dalam Penyuluhan Mengatasi Insomnia Pada Wanita Usia Lanjut," 147–50.
- Alfi, Wahid Nur, and Roni Yuliwar. 2018. "The Relationship between Sleep Quality and Blood Pressure in Patients with Hypertension." *Jurnal Berkala Epidemiologi* 6 (1): 18. <https://doi.org/10.20473/jbe.v6i12018.18-26>.
- Ardian, I, N. N Haiya, and T. U Sari. 2018. "Signifikansi Tingkat Stres Dengan Tekanan Darah Pada Pasien Hipertensi." *Proceeding Unissula Nursing Conference* 1 (1): 152–56. <http://jurnal.unissula.ac.id/index.php/unc/article/view/2907>.
- Badan Penelitian Dan Pengembangan Kesehatan Kementerian Kesehatan RI. 2013. "Riset Kesehatan Dasar." *Departement Kesehatan RI*, no. 1: 1–303. <https://doi.org/10.1016/j.pengkesehatan.2013.12.001> Desember 2013.
- Dalimartha S, Purnama BT, Sutarina N, Mahendra B, Darmawan R. 2008. *Care Your Self Hypertension*. Depok: Penebar Plus.
- Hawari, Dadang. 2011. *Manajemen Stres Cemas Dan Depresi*. Jakarta: FKUI.
- Kabak, Vesile Yıldız, Yavuz Yakut, Mualla Çetin, and Tülin Düger. 2016. "Çocuklar İçin Yaşam Kalitesi Ölçeği Kanser Modülü Türkçe Versiyonunun 2-7 Yaşları Arasındaki Çocuklarda ve Genel Skalası'nin 5-7 Yaşları Arasındaki Çocuklarda Geçerlik ve Güvenilirliği: Hacettepe Üniversitesi Deneyimi." *Turkish Journal of Hematology* 33 (3): 236–43. <https://doi.org/10.4274/tjh.2015.0242>.
- Kemenkes RI. 2018. *Riskesdas*. Jakarta: Kemenkes RI.
- Maretdhidta Arta, Charolena. 2013. "Pengaruh Back Massage Durasi 20 Menit Dan 40 Menit Untuk Meningkatkan Kualitas Tidur." *Surakarta*.
- Ningsih, Ningsih, and Yuliasati. 2018. "Pengaruh Back Rub Terhadap Kecemasan Dan Gangguan Tidur Pada Anak Pra Sekolah Saat Hospitalisasi." *Community of Publishing in Nursing* 6 (3): 135–42.

- Remmes, A.H. 2012. *Current Diagnosis and Treatment Neurology, Sleep Disorders*. Second. Singapore: The McGraw-Hill Companies.
- Rizkiana, Jany. 2018. “Pengaruh Terapi Massage Punggung Terhadap Kualitas Tidur Lansia Di Balai Pelayanan Sosial Tresna Werdha Unit Budi Luhur Kasongan Bantul Yogyakarta Naskah Publikasi.” *Universitas Aisyiyah Yogyakarta* 1 (1): 1.
- Rosfiati, Eddy, Elly Nurachmah, and Yulia. 2015. “Pengaruh Pijat Punggung Terhadap Tingkat Kecemasan Dan Kenyamanan Pasien Angina Pektoris Stabil Sebelum Tindakan Angiografi Koroner.” *Jurnal Keperawatan Indonesia* 18 (2): 102–14. <https://doi.org/10.7454/jki.v18i2.411>.
- Setyawan, Annaas Budi. 2017. “Hubungan Antara Tingkat Stres Dan Kecemasan Dengan Kejadian Hipertensi Pada Lansia Di Klinik Islamic Center Samarinda.” *Jurnal Ilmu Kesehatan* 5 (1): 1–8. <https://journals.umkt.ac.id/index.php/jik/article/view/53/32>.
- Setyohadi, Kusharyadi &. 2011. *Terapi Modalitas Keperawatan Pada Klien Psikogeriatrik*. Jakarta: Salemba Medika.
- Sirait, Anna Maria, and Woro Riyadina. 2013. “Insiden Hipertensi Pada Kohor Prospektif di Kelurahan Kebon Kalapa Bogor ( Hipertension Incidence in Prospective Cohort Study in Kebon Kalapa Village Bogor City ),” 99–107.
- Suliswaty. 2005. *Konsep Dasar Keperawatan Kesehatan Jiwa*. Jakarta: EGC.
- Udani, Giri. 2016. “Pengaruh Massase Pada Penderita Hipertensi Di UPTD Panti Tresna Werdha Lampung Selatan.” *Jurnal Kesehatan* 7 (3): 503. <https://doi.org/10.26630/jk.v7i3.236>.
- Wahdah, Nurul. 2011. *Menaklukan Hipertensi Dan Diabetes*. Yogyakarta: Multipress.
- World Health Organization. 2010. “Global Status Report on Noncommunicable Diseases.” *World Health Organization* 53 (9): 1689–99. <https://doi.org/10.1017/CBO9781107415324.004>.