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THE APPLICATION OF A COMBINATION OF WARM COMPRESSES AND *SLOW STROKE BACK MASSAGE* WITH OLIVE OIL IN REDUCING THE HEADACHE SCALE OF HYPERTENSIVE PATIENTS AT DR. GONDO SUWARNO HOSPITAL

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ABSTRACT

Background: The 2023 Indonesian Health Survey found that the prevalence of hypertension in the population aged >18 years was 30.8%. Hypertension is the leading cause of death worldwide. The initial symptoms of hypertension are asymptomatic, characterized only by an increase in blood pressure. Most people with hypertension complain of tight necks to headaches that create discomfort in the head area. **Objective:** To explain nursing care in hypertensive patients with warm compresses and *slows stroke back massage* in lowering the scale of headaches. **Methods:** This case study uses a descriptive method by applying *an evidence-based practice* that focuses on one of the nursing problems. **Results:** In a case study conducted on 3 respondents who experienced headaches due to hypertension by being given a combination of warm compresses and *slow stroke back massage* for 6 meetings, there was a decrease in pain scale. In Mrs. W, the initial pain scale was 4 after the intervention to a pain scale of 1. In Mr. K, the initial pain scale of 5 after the intervention became 1. In Mr. M, the initial pain scale was 4 after the intervention, the pain scale became 1. **Conclusion:** The application of a combination therapy of warm compresses and *slow stroke back massage* with olive oil is effective in reducing pain.

Keywords: Warm Compress; Slow Stroke Back Massage; olive oil; headache; Hypertension.

Introduction

Hypertension is a chronic disease that occurs due to excessive blood pressure and tends to be unstable in the arteries. This condition is related to an increase in pressure on systemic arteries, both diastolic and systolic pressure, on a continuous basis (Lukitaningtyas & Agus, 2023). Hypertension occurs when the pressure in the blood vessels is too high (140/90 mmHg or higher). This condition is common, but can become serious if left untreated (WHO, 2023).

According to the American Heart Association (AHA), about 74.5 million adults in the United States have hypertension, but about 95% of cases have no known cause (WHO, 2023). Based on the results of the 2023 Indonesian Health Survey (SKI), the prevalence of hypertension in the population over 18 years old is 30.8% (Ministry of Health of the Republic of Indonesia, 2023). Based on the results of the recapitulation of data on new cases of NCDs (Non-Communicable Diseases) in Central Java Province reported as a whole in 2023, hypertension occupies the largest proportion of all reported NCDs, which is 72.0% (Central Java Statistics Agency, 2024).

Hypertension is one of the global targets for non-communicable diseases, namely by reducing the prevalence of hypertension by 33% between 2010 and 2030 (WHO, 2023). Based

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on data in the Alamanda Room of Dr. Gondo Suwarno Hospital, hypertension is one of the diseases that patients often suffer from in the room.

The initial symptoms of hypertension are usually asymptomatic, only characterized by an increase in blood pressure (Anggraini & Leniwita, 2020). Hypertensive people Most complain of tight necks to headaches that create discomfort in the head area from the chin to behind the ears (Haekal et al., 2021). Headaches arise due to increased blood pressure on the walls of blood vessels in the neck area that supply blood to the brain. This causes increased pressure on the brain's blood vessels and presses on the nerve fibers in the neck muscles, which results in pain or discomfort in the area (Kang et al., 2023).

Non-pharmacological approaches can be used to reduce headaches, one of which is by being given a combination of warm compresses and slow stroke back massage. Warm compresses provide a warm sensation to a specific area of the body by using a heat-generating liquid or device to relieve discomfort in the affected area. In addition, it can relax the muscles in the blood vessels and dilate the blood vessels so that it can increase the intake of oxygen and nutrients to brain tissue so that it can relieve pain (Iskandar et al., 2024). Based on research conducted by Kristiana Puji Purwandari in 2023 regarding "The Effect of Warm Compresses on the Neck on Headaches in Hypertensive Patients in Blimbing Hamlet" shows that there is a decrease in the pain scale after being given a warm compress intervention. (Purwandari, 2023).

In addition to warm compresses, another nonpharmacological therapy that can be used as a combination in reducing headache in hypertensive patients is SSBM (Slow Stroke Back Massage) which is part of complementary therapy in the form of a movement with gentle touching and pressing on the body of the back (Takhani & Riniasih, 2022). Slow stroke back massage creates a sense of comfort, relaxation and relieves tension then triggers the release of endorphins that stop the transmission of pain stimuli (Komang et al., 2021).

Research conducted by Defrima and Viki in 2022 with the title "The Effectiveness of Slow Stroke Back Massage Therapy for Headache in Hypertensive Patients" showed that SSBM was effective in overcoming headache problems in hypertensive patients in the Lubuk Buaya Health Center Working Area (Surya & Yusri, 2022).

The combination of compresses and massage makes the reduction in pain levels faster than when applying just one of the actions. Based on research conducted by Iskandar et al. in 2024 by applying a combination of warm compresses and massage, it was proven that the pain reduction was greater than respondents who were given only one therapy (Iskandar et al., 2024).

Based on existing phenomena and facts based on scientific evidence, the author is interested in applying an evidence-based practice combination of warm compresses and slow stroke back massage with olive oil in reducing the headache scale of hypertensive patients at dr. Gondo Suwarno. The purpose of this case study is to provide nursing care to hypertensive patients who experience headache problems

Methods

This case study uses a descriptive method by applying an evidence-based practice that focuses on one of the nursing problems, namely acute pain. The subjects in this case study were hypertensive patients and were not receiving hypertension drug therapy through a syringe pump. The time for the case study is 12-23 Juni 2025 in the Alamanda Room of dr Gondo Suwarno Hospital.

Results and Discussion

Table. 1 Patient Assessment

Assessment	Patient 1	Patient 2	Patient 3
Identitiy Date of review	Mrs.W, Female, 51 years old, Muslim, Elementary School 12-06-2025	Mr.K, Male, 50 years old, Muslim, Junior High School 13-06-2025	Mr. R, Male, 58 years old, Muslim Elementary School 17-06-2025
Current Health History	Blood Pressure: 150/101 mmHg Heart Rate:	Blood Pressure: 170/90 mmHg. HR: 82	Blood Pressure: 160/105 mmHg. HR: 90 x/min.

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	99 x/min Respiratory Rate: 22 x/min SpO2: 98% Temperature: 36°C Pain Assessment: P: High tension, pain worsens with increased stress and affects sleep. Pain decreases with rest and medication Q: Stubborn, dull. R: From the nape of the neck extending to the back. S: Level 4 on the pain scale. T: Duration 15 seconds, then resolves.	x/min. RR: 20 x/min. SpO2: 99% Temperature: 36.3 C Pain assessments include: P: High tension and a lot of activity. Pain increases when blood pressure rises and decreases at rest. Q: Stubborn, blunt. R: The nape of the neck and spread to the back. S: 5 T: disappearance arises, the duration when pain appears is 10 seconds.	RR: 20 x/min. SpO2: 98% Temperature: 36.5 C Pain Assessment: P:High tension and a lotof activity. Pain increases when blood pressure rises and decreases at rest. Q: Stubborn, blunt. R: The nape of the neck and spread to the back. S: 4 T: disappearance arises, the duration when pain appears is 10 seconds
Hypertension Drug Therapy	Kandesartan 1x16 mg (oral)	Kandesartan 1x8 mg (oral)	Kandesartan 1x16 mg (oral)
Medical Diagnosis	SNH, HT, DM	CHF, HT	Vertigo,HT

Based on table 1 regarding patient assessment, there were 3 patients who became respondents. The complaints of the three are the same, namely pain in the neck area and spreading to the back. In Mrs. W, the pain scale is 4. In Mr. K the pain scale is 5 and in Mr. R the pain scale is 4.

Hypertensive headaches occur due to an increase in blood pressure. Headaches are caused due to vascular damage. Structural changes in the small arteries and arterioles lead to blockage of blood vessels. If the blood vessels narrow, the arterial flow will be disrupted. In disturbed tissues, there will be a decrease in O2 (oxygen) and an increase in CO2 (carbon dioxide) then there will be anaerobic metabolism in the body which increases lactic acid and stimulates capillary pain in the brain (Oscar Valerian et al., 2021).

Table. 2 Pain Scale Before and After Application of Warm Compresses and Slow Stroke Back Massage

Respond	Pre		Post		Total Decline
	Pain Scale	Blood pressure	Pain Scale	Blood pressure	
Patient 1	4	150/101 mmHg	1	138/88 mmHg	3/4 x 100% = 75%
Patient 2	5	170/95 mmHg	1	150/88 mmHg	4/5 x 100% = 80 %
Patient 3	4	160/90 mmHg	1	130/90 mmHg	3/4 x 100% = 75%

Based on table 4.8, it shows that there is a decrease in the scale of headache in hypertensive patients after being given warm compress and *slow stroke back massage* interventions 6 times for 3 days. In client 1 there was a decrease in the pain scale by 75%, in the 2nd client there was a decrease in the pain scale by 80% and in client 3 there was a decrease in the pain scale by 75%.

The combination therapy of warm compresses and *slow stroke back massage* was carried out in 6 meetings. The procedure for giving this combination begins with a warm compress for 15 minutes then continues with *a slow stroke back massage* for 10 minutes. There

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was a decrease in pain scale in the three respondents after being given a combination of warm compresses and *slow stroke back massage* with olive oil.

The use of warm compresses has benefits in increasing blood flow to specific areas and helping to relieve pain. Warm compresses work by stimulating non-pain receptors (non-nociceptors) through the transmission stage, where the warm sensation that arises can inhibit the inflammatory mediator, thereby increasing the pain threshold resulting in a decrease in pain (Yuniawati & Puspitasari, 2024). Warm compresses reduce prostaglandin levels which later trigger inflammation or inflammation. Prostaglandins act as mediators that cause pain in tissues that have been damaged by excess pressure. With a decrease in prostaglandins, the sensitivity of pain receptors becomes lower (Oscar Valerian et al., 2021).

The decrease in pain scale that occurred in the three patients was also affected by the administration of *slow stroke back massage* with olive oil. SSBM *(Slow Stroke Back Massage*) stimulates nerves in the outermost layer of skin which then sends signals to the brain, especially the hypothalamus, which triggers the release of endorphin hormones. This endorphin hormone provides a relaxation effect that causes dilation of blood vessels (vasodilation) and lowers blood pressure. In addition, endorphins also stimulate the production of the hormone dopamine which makes an increase in the parasympathetic nerves. These nerves play a role in controlling various bodily activities and are active when the body is in a relaxed state. Therefore, hypertensive patients can feel touch as a stimulus that triggers a relaxation response which will later help reduce headaches (Surya & Yusri, 2022). The use of olive oil in this massage also makes the blood vessels dilate which is an effect of the olive oil content, namely polyphenols. Vasodilation effect in blood vessels through increased Nitric Oxide Syntase (Khairina & Septiany, 2024). Olive oil during massage produces aroma therapy that provides comfort, makes blood circulation smooth, relieves anxiety and changes the feeling of comfort and (Sari et al., 2022).

Warm compresses and *slow stroke back massages* have an effect on pain respectively. With the combination of these two actions, the reduction in pain levels becomes faster than when applying one of the actions alone. This is in line with the 2023 research by Afra et al regarding "The Effect of Warm Compresses & Acupressure on the Reduction of Headache in Hypertensive Elderly in Lhok Bengkuang Timur Village, Tapaktuan District, South Aceh Regency". Respondents who were given warm compresses and acupressure experienced more pain reductions than respondents who were only given warm compresses (Afra et al., 2023). This is because headaches in hypertension respondents have decreased after being given warm compresses, because the administration of

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this warm compress facilitates circulation and reduces pain. In addition, respondents also received acupressure which can produce endorphin hormones to reduce headaches in hypertensive patients (Afra et al., 2023).

Conclusion

The results of this case study showed a decrease in the scale of headache in hypertensive patients before and after being given combination therapy of warm compress and *slow stroke back massage* with olive oil 6 times for 3 days with a duration of warm compress administration of 15 minutes and *slow stroke back massage* for 15 minutes. In patient 1 initial pain scale 4, Blood pressure: 150/101 mmHg, HR: 99 x/min, RR: 22x/min, Oxygen saturation: 98%, Temperature: 36 C, after intervention to scale 1 with blood pressure: 135/80 mmHg, HR: 85 x/min, Oxygen saturation: 99%, RR: 20x/min, Temperature: 36.1 C. In the 2nd patient, the initial pain scale is 5, Blood pressure: 170/95 mmHg, HR: 82 x/min, RR: 20x/min, Oxygen saturation: 99%, Temperature: 36.3 C after intervention to pain scale 1, Blood pressure: 150/88 mmHg, HR: 84x/min, Oxygen saturation: 100%, RR: 21x/min, Temperature: 36.2 C. In the 3rd patient, initial pain scale 4, Blood pressure: 160/90 mmHg, HR: 90 x/min, RR: 20x/min, Oxygen saturation: 98%, Temperature: 36.5 C, after the intervention the pain scale was 1 with blood pressure: 130/85 mmHg, HR: 85 x/min, Oxygen saturation: 98%, RR: 20x/min and Temperature: 36.2 C. The results of this case study can be used as a new reference for nurses in overcoming headache problems in hypertensive patients.

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