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Application Of Back Massage In Reducing Pain In Elderly With Hypertension: A Case Study

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A B S T R A C T

High blood pressure is a major cardiovascular disease risk factor that occurs with age. Most elderly patients suffer from isolated systolic hypertension resulting from changes in the arterial wall that cause arterial stiffness. One of the problems that arise due to increased blood pressure is pain. Pain is felt in the head and radiates to the shoulder. Head pain can be overcome by providing non-pharmacological therapy, one of which is back massage. The aim of this study was to overcome pain in the elderly suffering from hypertension. This study used a case study method, the subjects in this study were 2 elderly people suffering from hypertension with acute pain problems. The results of this study are after three days of nursing care with the provision of back massage therapy in both patients showed acute pain associated with biological injurious agents resolved with indicators of pain descending scale, activity ability to be moderately increased, complaints of pain decreased, grimacing moderately decreased, difficulty moderately decreased, blood pressure moderately improved. The conclusion obtained from the results in this study is that back massage therapy can lower blood pressure and reduce pain.

INTRODUCTION

Hypertension is one of the leading causes of death worldwide and risk factor for cardiovascular events, including cardiac death, coronary heart disease, heart failure, and ischemic or hemorrhagic stroke (WHO, 2021); (Lee et al., 2019). As one of the leading causes of death globally, hypertension is responsible for 38 million (68%) of the world's 56 million deaths, more than 40% of which (16 million) are deaths under the age of 70 (WHO, 2021). The incidence of hypertension will increase with the age of a person, at the age of 25 to 44 years the incidence of hypertension reaches 29%. At the age of 45 years reached 51% and at the age of more than 65 years reached 65% (Ahda Fadillah et al., 2022).

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An estimated 1.28 billion adults aged 30-79 years worldwide suffer from hypertension, most of whom (two-thirds) live in low and middle-income countries (WHO, 2021).

Central Java Province is ranked fourth with the most hypertension patients in Indonesia. In 2018, hypertension patients in Central Java reached 37.6%. (Badan Pusat Statsitik, 2020). The Central Statistics Agency (BPS) in September 2020, has released the results of the Population Census. The census that was conducted noted that the number of elderly people aged 60 years and over in Central Java is relatively high, which is around 4.4 million people or 12.15 percent of the total population of Central Java which reached 36.52 million people. The elderly population in Semarang City continues to increase. In 2016, the number of elderly reached 141 thousand people or 8.17 percent of the total population of Semarang City, then increased to 148 thousand people or 8.47 percent in 2017, until in 2020 the number of elderly people in Semarang City increased to 170 thousand people or 9.29 percent (Badan Pusat Statsitik, 2020).

Research conducted by (Nurhidayati et al., 2018), explained that there was an increase in high blood pressure in the elderly aged 60-64 years by 2.18 times, aged 65-69 years 2.45 times, > 70 years 2.97 times. High blood pressure is a major cardiovascular risk factor. People with hypertension who are older than 65 years are at greater risk of falls and visual impairment (Ferreir et al., 2021). The prevalence of hypertension increases with age, due to changes in the arterial wall that cause arterial stiffness, most elderly patients suffer from isolated systolic hypertension (Rubio-Guerra & Montserrat B. Duran-Salgado, 2014).

Management of hypertension can be done using pharmacology and non-pharmacology. One interventions to lower blood pressure in people with hypertension is relaxation therapy. Relaxation therapy is needed for people with hypertension to make blood vessels relax so that vasodilation will occur which causes blood pressure to drop and normalize. To make the body relax can be done in several ways such as classical music therapy, yoga, deep breathing techniques, and massage therapy. (Suarni, 2017). Relaxation therapy used to treat pain and blood pressure problems in hypertensive patients is one of them with back massage therapy. This interventions can make blood vessels vasodilate and increase the baroresoptor reflex response which affects the decrease in sympathetic system activity and increases parasympathetic nerve activity.

METHODS

This research methods uses a case study design. The subjects used in this study were patients with hypertension problems consisting of 2 patients. This application was carried out for 3 days, each of which was carried out once a day for 15 minutes. The application instruments used were questionnaire sheets regarding respondent characteristics (age, gender, medical diagnosis, occupation), observation sheets and digital sphygnomanometer in mmHg units.

The criteria for respondents in this case study are elderly people aged > 60 years who experience hypertension and are willing to become respondents. The sample was obtained using the Non Probability Sampling method with the Convenience Sampling technique, thus obtaining two elderly people, namely Mrs. F and Mrs. S who experienced hypertension and managed for three days. The place of this research was conducted at the Nursing Home Kasih Ibu in Semarang City.

RESULT AND DISCUSSION

Result

Characteristic Data

An overview of patients characteristics and data established at the time of assessment in accordance with the stages of the implementations plan as follows:

Table. 1 Characteristic Data

Characteristic Data	Patients I Ny. F	Patients II Ny. S
Age	72	63
Gender	Female	Female
Occupation	Not working	Not working
Education	Junior high school	High school

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Diagnose Medic	Grade 2 hypertension	Grade 1 hypertension

Based on table 1 above, after conducting an assessment on the first day to two respondents, the results showed that both respondents were female, aged 60 years and above, high school and junior high school education and grade one and two hypertension.

Assessment

Patients I

The main complaint obtained during the assessment of patients I (Mrs. F) said pain in the nape of the neck radiating to the shoulders and headache. Pain assessment with the PQRST technique. P: pain when blood pressure is high, Q: pain like being hit, R: pain is felt in the nape of the neck, S: pain scale 6, T: pain occurs. Measurement of vital signs Pulse 81x/min, Temperature 36.0°C, respiration 20x/min, Blood Pressure 190/90 mmHg, frequent head massage, grimacing and difficulty sleeping.

Patients II

The main complaint obtained during the assessment of patients II (Mrs. S) said pain in the head and dizziness. Pain assessment with the PQRST technique. P: pain when blood pressure is high, Q: pain like stabbing, R: pain felt in the nape of the neck, S: pain scale 5, T: pain occurs. Measurement of vital signs Pulse 60x/min, Temperature 37.0°C, respiration 18x/min, Blood Pressure 170/90 mmHg, frequent head massage, grimacing and difficulty sleeping.

Nursing Diagnosis

Based on the data above, the priority nursing diagnoses in Patients I (Mrs. F) and Patients II (Mrs. S) are acute pain associated with biological injury agents.

Nursing Interventions

Implementations that has been carried out to treat pain in patients I and patients II experienced by patients is monitoring vital signs in patients, assessing the pain scale experienced by patients, collaborating on drugs for pain management. Decrease the pain experienced by the patients, provide a comfortable and quiet space, provide back massage to the patients for 15 minutes.

Nursing Implementations

Patients I

Implementations of Day One

Assessing vital signs at 08.30, Subjective: the patients said dizzy, Objective: Blood Pressure 190/90 mmHg Respiration 20x/min Pulse 81x/min, Temperature 36.0°C. Assessing pain at 09.00 am, Subjective: the patient said pain in the nape of the neck radiating to the shoulders and dizzy head, P: pain during activity, Q: Like being hit by a heavy object, R: The head of the nape radiates to the shoulder, S: 6, T: occurs. Objective: the patients seemed to grimace in pain and often massaged his head. Reducing environmental factors that can affect or make the patients feel uncomfortable at 9.30 am, Subjective: the patients is willing, Objective: the room is set to be quiet. Giving back massage at 10:00 am, Subjective: the patient said willing, Objective: the patients looks relaxed, giving nicardipine and amoldipine 5 mg.

Implementations of Day Two

Monitor vital signs at 09.00 am, Subjective: patients said dizziness and headache, Objective: Blood Pressure: 163/80 mmHg, Pulse 89x/min, Temperature 36.2°C Respiration 20x/min. Assessing pain at 10:00 am, Subjective: The patients said pain in the nape of the head, P: pain on exertion Q: Like being hit by a heavy object, R: Back of the head, S: 4, T: disappeared. Objective: the patients seemed to grimace in pain and often massaged his head. Giving back massage at 11:00 am, Subjective: the patient said he was willing, Objective: the patients looked relaxed, giving nicardipine and amoldipine 5 mg.

Implementations of Day Three

Monitor vital signs at 09.00 am, Subjective: the patients said his nape pain had decreased, Objective: Blood pressure 130/80 mmHg, pulse 90x/min, temperature 36.4°C, respiration 18x/min. Assessing pain at 10:00 am, Subjective: The patients said the pain had decreased, pain scale 2. Objective: no grimace. Giving back massage at 11.00 am, Subjective: the patients said he was willing, Objective: the patients looks relaxed, giving nicadipine and amoldipine 5 mg.

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Patients II

Implementations of Day One

Assessing vital signs at 09.00, Subjective: the patients said dizzy, Objective: Blood Pressure 170/90 mmHg, Temperature 37.0°C, Respiration 18x/min Pulse 60x/min. Assessing pain at 09.20 am, Subjective: the patients said pain in the nape of the neck, P: pain during activity, Q: Like being hit by a heavy object, R: Head of the nape, S: 5, T: disappeared. Objective: the patients appears to be grimacing. Reducing environmental factors that can affect or make the patients feel uncomfortable at 9.30 am, Subjective: the patients is willing, Objective: the room is set to be quiet. Giving back massage at 10.00 am, Subjective: the patients said willing, Objective: the patients looks relaxed. Giving medicine at 12.00 pm, giving nicardipine and amoldipine 5 mg.

Implementations of Day Two

Monitor vital signs at 09.00 am, Subjective: the patients said dizziness and headache, Objective: Blood Pressure: 150/90 mmHg, Pulse 76x/min, Temperature 37.3°C Respiration 17x/min. Assessing pain at 10:00 am, Subjective: The patients said pain in the nape of the head, P: pain on exertion Q: Like being hit by a heavy object, R: Back of the head, S: 3, T: disappeared. Objective: the patients seemed to grimace in pain and often massaged his head. Giving back massage at 11:00 am, Subjective: the patients said he was willing, Objective: the patients looked relaxed, giving nicardipine and amoldipine 5 mg.

Implementations of Day Three

Monitor vital signs at 09.00 am, Subjective: the patients said the nape pain was no longer felt. Objective: Blood Pressure 130/85 mmHg, Pulse 87x/min, Temperature 36.5°C, Respiration 20x/min. Assessing pain at 10:00 am, Subjective: The patients said the pain was no longer felt, neyri scale: 0. Objective: no grimace. Giving back massage at 11.00 am, Subjective: the patients said he was willing, Objective: the patients looked relaxed, giving nicardipine and amoldipine 5 mg.

Evaluations

Nursing evaluation of Patients I (Mrs. F), Subjective: the patients said the pain had decreased. Objective: the patients looks relaxed, comfortable and does not hold back pain. Analysis: the problem is resolved. Planning: stop the interventions, blood pressure 130/90 mmHg. Nursing evaluation of Patients II (Mrs. S), Subjective: the patients said the pain was gone. Objective: the patients has not held the nape of the neck and grimaced in pain anymore. Blood Pressure 130/75 mmHg, Pulse 85x/min, Temperature 36.7°C, Respiration 20 x/min. Analysis: problem solved. Planning: discontinue interventions.

Discussion

Assesment

Based on the results of the assessment carried out on two patients, it was found that Patients II: aged 72 years and patients II: aged 60 years based on the data obtained that in the elderly aged 60-64 years there was an increase in hypertension by 2.18 times, aged 65-69 years 2.25 times, > 70 years 2.97 times. Age is one of the factors that affect high blood pressure (hypertension). The older a person is, the greater the risk of developing hypertension (Ferri et al., 2017).

The complaints felt by Patients I and Patients II are similar, namely complaining of pain in the nape of the neck, weakness and difficulty sleeping due to pain. However, there are differences in complaints of pain felt, namely: Patients I said the nape pain radiated to the shoulder and pain scale 6 and Patients II said the pain was only the nape with a pain scale of 5. Complaints experienced by patients are in accordance with theory (Adrian, 2019) that in patients with hypertension complaints will appear, namely headache, dizziness, easy fatigue, weakness and decreased sleep quality. Hypertension in the elderly can be associated with frailty and is a risk factor for frailty. Hypertension is recognized as a major risk factor for cardiovascular diseases such as heart failure (Lee et al., 2019), atrial fibrillation, and stroke and the occurrence of these diseases can trigger a decline in health status and/or worsen the degree of frailty (Guasti et al., 2022).

Nursing Diagnosis

A nursing diagnosis is a clinical assessment of a patients response to a health problem. (Tim Pokja DPP PPNI, 2018), Based on the assessment data in patients I

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and II, two nursing problems were found that were in accordance with the standard nursing diagnoses based on (SDKI). The nursing problems that arise in this nursing care are acute pain associated with biological injury agents, disturbed sleep patterns associated with acute pain and the risk of ineffective cerebral tissue perfusion associated with inadequate oxygen supply. Both patients have the same nursing diagnosis. Increased blood pressure will cause dizziness (pain in the head) pain is defined as an unpleasant sensory or emotional experience associated with actual or functional damage, with sudden or slow onset and mild to severe intensity lasting less than 3 months (Tim Pokja DPP PPNI, 2018).

Nursing Interventions

After nursing interventions for three times twenty-four hours, it is expected that blood pressure will decrease and acute pain will decrease with the criteria for the results of activity ability from moderately decreased (2) to moderately increased (4), complaints of pain from moderately increased (2) to decreased (4), grimacing from moderately increased (2) to moderately decreased (4), difficulty sleeping from moderately increased (2) to moderately decreased (4), blood pressure from moderately worsened (2) to moderately improved (4), blood pressure from increased (5) to decreased (1). The first action that must be identified is the patients pain, monitor the patients blood pressure and provide non-pharmacological therapy, namely back massage. Pain management is identifying and managing sensory or emotional experiences related to tissue or functional damage with sudden or slow onset and mild to severe intensity and constant.

Lowering blood pressure and pain can be done with non-pharmacological therapy and pharmacological therapy, provide non-pharmacological therapy, namely back massage because this therapy has a certain influence on body tissue besides that pressure, direction of motion, and repetition, and rhythm determine its effect (Ilmi et al., 2018) and pharmacological therapy is given nicardipine to reduce pain, amplodipine is given, but in uncontrolled hypertension, even though the drug is given regularly, the blood pressure still remains high (Darussalam & Warseno, 2019). Giving back massage to patients is done for 15 minutes (one session) for three days. The provision of this therapy is carried out in the patients room by arranging the room as comfortable as possible and maintaining patients privacy. From the results of previous studies, the duration of back massage can be done for 10-30 minutes (Maimunah et al., 2018).

Evaluations

The results of the evaluation of the application of back massage for 3 days with the average patients blood pressure value decreased and the pain problem was reduced, the decrease in blood pressure experienced by the patients was influenced by therapy (back massage). The time of blood pressure measurement also needs to be considered so that it can provide accurate and good measurement results before and after the back massage interventions, and the effectiveness of the interventions is also influenced by the administration of anti-hypertensive and anti-pain medications (Maimunah et al., 2018).

Implementations in patients I was carried out for three days. There were significant changes in blood pressure and pain from day one to day three, namely 190/90 mmHg and pain on a scale of 6, decreasing to 130/80 mmHg and pain to scale 1. In patient 2, the decrease in blood pressure and pain experienced a sufficient process after getting back massage therapy. On the first day patients II had headache. After being given puunggun massage therapy, there were significant changes in blood pressure and pain from day one to day three, namely 170/90 mmHg and pain on a scale of 5, decreasing to 130/85 mmHg and pain to scale 0.

Based on the results of previous studies back massage provides a positive psychological effect to increase afferent activity on the parasympathetic vagal nerve this alters sympathetic outflow (Aourell et al., 2013). Massage can help reduce blood vessel stiffness. Massage can cause muscles to relax, stimulates the nerves sympathetic and parasympathetic so that blood vessels can experience vaso dilation which causes blood vessels to dilate, causing a decrease in blood pressure (Anggriawan et al., 2022). Massage has many benefits (Walaszek, 2015), physiologically improve blood circulation, reduce pain, stimulate the innervation and hormonal system, and reduce fatigue (Sukardin et

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al., 2018);(Udani, 2016). Supported by previous studies, back massage can reduce systolic pressure in hypertensive patients and improve sleep quality (Arslan et al., 2021).

CONCLUSION

Back massage therapy is able to lower blood pressure and reduce head pain in patients I, the initial blood pressure of 190/90 mmHg to 130/80 mmHg and pain that was originally from scale 6 can decrease to 2 and in patients II the initial blood pressure was 187/94 mmHg to 120/80 mmHg and pain that was originally scale 5 can decrease to scale 0 after three days of back massage therapy.

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