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The use of hydrotherapy as a complementary treatment for hypertension in elderly patients

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Abstract

Hypertension can cause stroke, myocardial infarction, kidney failure, and brain damage and can even cause death. Hypertension requires compliance to improve the health of one of the therapies, namely by using non-pharmacological therapy independent actions of nurses such as hydrotherapy (foot soaking in warm water), a straightforward and natural medicine because this treatment method does not have harmful side effects, and does not use drugs. Modern. This study aims to prove the effect of a warm foot soak mixed with salt and lemongrass on reducing blood pressure in hypertension. The method used in this study is a case study. This study describes a case study on nursing care at the risk of ineffective cerebral perfusion. The subject of this case study uses one respondent who does not take hypertension medication regularly, with the classification of moderate hypertension at the age of 45-65 years. Warm foot soak hydrotherapy with a mixture of salt and lemongrass can overcome the problem of the risk of ineffective cerebral tissue perfusion and reduce blood pressure.

Keywords: Hypertension; elderly; community nursing; hydrotherapy; cerebral tissue perfusion

Introduction

Hypertension, or high blood pressure, is the most common disease known by the Indonesian people and even the people in the world today. It is a significant enough health problem to be overcome. This disease attacks the cardiovascular system and causes heart failure, heart attack, and stroke (Arum, 2019). Hypertension, or high blood pressure, is when systolic blood pressure is >140 mmHg and diastolic pressure is >90 mmHg. It is often called the silent killer (Fatima & Mahmood, 2021). The number of people with hypertension is increasing yearly; according to the World Health Organization (WHO), the world's number of hypertensive people has reached 1 billion, and among them is fluctuating. Every day, the number of hypertensive people increases by 972 million (26%) of the world's adults suffer from hypertension. This figure will continue to rise, and it is predicted that by 2025, about 29% of adults worldwide will suffer from hypertension. As seen from Riskesdas data (2018), hypertension is the leading cause of non-communicable diseases such as stroke, diabetes, heart disease, kidney failure, joint disease, and cancer.

The prevalence of hypertension in Indonesia in 2018 has increased over the last five years; from 2013 to 2018, the majority of high blood pressure in Indonesia was about 25.8%, and in 2018, it increased to 34.1% (Riskesdas, 2018). In Central Java, hypertension prevalence in 2018 reached 37.57% in women (40.17%), higher than in men (34.83%). Urban hypertension is more elevated than domestic hypertension; the prevalence in the district itself reaches 13.32%, and the majority in the city of Magelang is much higher than in the local community; going 100% will continue to increase with age (Dinas Kesehatan Provinsi Jawa Tengah, 2019). Although the number of patients with hypertension in the city of Magelang is much higher than in the district, patients with hypertensive diseases in the area must be dealt with to reduce the risk of an increase in the number of patients who suffer from high blood pressure. This hypertension can cause stroke, myocardial infarction, kidney failure, brain damage, and even death (Singh, Shankar & Singh, 2017). Hypertension also often shows no symptoms, becoming the silent killer of death and the leading cause of heart disease, stroke, and kidney disease. Hypertension also usually occurs in the elderly. As the risk of developing hypertension increases, the walls of the arteries will experience thickening caused by the accumulation of collagen substances in the muscle layer, resulting in the blood vessels narrowing and becoming stiff after age 40. In addition to age factors, the sex of the respondents can also be associated with hypertension. The prevalence of hypertension in men is higher than in women (Amanda & Martini, 2018).

Hypertension is more likely to affect men than women due to the existence of work problems associated with the behaviors of smoking and drinking alcohol accompanied by unhealthy foods, which cause blood pressure to rise. Dealing with hypertensive patients requires compliance with one of the therapies, which is non-pharmacological therapy. In the field of nursing, self-acting nurses have developed several non-pharmacological treatments, such as massage, which aims to help launch blood circulation; acupuncture, which is a way of healing by inserting needles into specific points; and hydrotherapy (sinking feet in warm water), which is a straightforward and natural therapy because these methods of treatment have no side effects and do not use modern medicines. Scientifically, warm water can smooth blood circulation, so people with hypertension can consume medications and use non-pharmacological therapeutic alternatives to warm water, which are cheap, easy to obtain, and can be done at home (Liszayanti, 2019).

This warm foot hydrotherapy mixture of salt and saliva helps improve blood circulation by widening the blood vessels. Salt contains sodium chloride (NaCl), and the body can balance sodium inside and outside. If the blood sodium levels increase, the kidneys will remove the excess fluid and sodium in the body. The aldosterone hormone will keep the sodium concentration in the blood at average values; the fluid balance will also be disrupted when a person loses sodium, and water will enter the cell to dilute sodium within the cell so that the extra-cellular fluid will decrease. This change will be able to lower blood pressure (Uliya & Ambarwati, 2020). It is spicy and warm, so it has anti-inflammatory benefits to eliminate pain and launch blood circulation to lower blood pressure. However, studies implementing hydrotherapy for patients with hypertension are rare in the literature. Therefore, this innovative study will help nurses deal with hypertension cases in a clinical or community setting. Based on such phenomena or events, the author is interested in caring for hypertensive patients with hydrotherapy, sinking feet with warm salt water, and serai to solve the problem of nurturing cerebral tissue perfusion disorders. In addition, the author is also interested because, in addition to hydrotherapy, sinking feet in warm water with a mixture of salt and serai is a cheap and easy way to do it, so it does not require expensive costs to use it. The study aimed to assess the effectiveness of hydrotherapy for patient with hypertension.

Method

In this study, the author uses research using descriptive methods. The illustrative process studies a picture of a phenomenon occurring within a particular population. Respondents focused on the study in applications of hydrotherapy which is a combination of salt and vegetables. The nursing diagnose was risk of cerebral perfusion that is ineffective on hypertensive patients who did not take antihypertensive medications with a classification of moderate hypertension (160/100 mmHg to 179/109 mmHg) with age 40–65 years. Data collection in this study is done through interview and observation methods. Conducting a directional pressure inspection before performing hydrotherapy, submerge the feet with a warm salt and serai mixture, and after hydrotherapy, submerge the legs with a hot salt mixture. Descriptive methods collect the research data through interviews, observations, and documentation. This activity is provided nursing care for respondents, conducted interviews during the examination, and implemented hydrotherapy during 14 days. The instrument for data collection is sphygmomanometer and questionnaire. The ethical clearance has been obtained before study outset.

Results

The authors performed hydrotherapy applications for 14 days with six actions, with the duration of this application being 15-20 minutes each time. This nursing care includes examination, diagnosis, planning, implementation, and evaluation of the client. The nursing process occurred from June 7, 2021, to June 19, 2021. The care was carried out with a client named Mr. D, a 64 years old elderly living in Magelang. He was teacher. During assessment he suffered from hypertension for 1.5 years. In the examination obtained, patients said they felt dizziness and headaches, their throat felt tired and painful, and it was sometimes difficult to sleep. The history of treatment when the sick took the medication when experiencing the pain referred to the nearest healthcare service, the lifestyle does not smoke or consume alcohol, and the exercise is good enough; the client does not work. From the results of the physical examination were the patient is having a good condition. Activity/Rest client measures difficulty sleeping; to cope with sleep, the client listening to the radio does not experience interference in its activity, so ADL is independent. At the cardio examination, the response was obtained without a history of heart disease; there was no edema in the extremities of the hands or feet. The blood pressure is 170/100 mmHg. The patients felt pain, with the quality of sprinkled or cracked, placed on the head, scale of 4, the frequency of loss arises. The client said she had dizziness and a headache; she said sometimes it's difficult to sleep, and the customer said the neck felt rubbing and painful. The

objective data showed that the client appeared tired and weak. The client had vital signs, with blood pressure 170/100 mmHg, heart rate 80 x/min, temperature of 36.5°C, and respiratory 22 x/min.

The second analysis attributed data to clients complaining of headaches and a heavy and painful neck, with Provokes: pain attributable to high blood pressure; Quality: cracked or crumbled; Regio: neck and head; Scale: 4, Timing: sometimes. The objective data attributed to the client appeared to be pain-resistant and suffocating, with a blood pressure 170/100 mmHg, heart rate 80 x/min, temperature of 36.5°C, and respiratory 22 x/min. Two types of data are obtained: subjective data and objective data. In the personal data, the client describes dizziness, headaches, sometimes difficulty sleeping, neck sensations, and pain. During six meetings, the author made a nursing plan to follow the nurse's actions. Expected nursery problems that arise can be solved. Desired systolic and diastolic blood pressure within the normal range, fever reduced, and dizziness decreased. Action or nursing plan performed to monitor signs of vitality, encourage the client to reduce activities that could result in increased intracranial pressure, perform relaxation therapy hydrotherapy sinking warm legs salt and serai mixture, and collaborate with the staff to implement hydrotherapy snooker warm leg sinkings salt and Serai mix.

After performing nursing actions for 14 days with six meetings for 15-20 minutes each, perform hydrotherapy and soak the feet in a warm mixture of salt and water. Implementation of the first meeting on Monday, June 7, 2021, with the problem of nursing the risk of cerebral perfusion is there were no complaints of dizziness and headache, the ankle feeling heavy and painful, difficulty sleeping, and appearing to be unhappy. Examining the signs of vitality, the results were blood pressure 170/100 mmHg, heart rate 80 x/min, body temperature of 36,5°C, and respiratory 22 x/min. Giving guidance to clients and families to reduce activities that create intracranial stress, with the customer's and family's responses understood, the client and family seem to understand what the nurse described of performing hydrotherapy. Implementation of the last nursing meeting on Friday, June 18, 2021, with the problem of nursery risk of cerebral perfusion was recording the complaints of dizziness and headache, the ankle feeling heavy and painful, difficulty sleeping, and the client saying the pain was lost. The result was a blood pressure 160/90 mmHg, heart rate 82 x/minute, temperature of 36.5°C, and respiratory 24 x/minute. The first nursing evaluation is client's response says dizziness, headaches, insomnia, the neck feels heavy, and the pain decreases; the client understands activities that cause increased intracranial pressure. The client grimaced in pain with vital signs obtained blood pressure 150/90 mmHg, heart rate 80x/minute, respiratory 22x/minute, temperature 36.5°C. In the last nursing evaluation on Friday, June 18, 2021, with a nursing problem at risk of ineffective cerebral perfusion, the client's response said no dizziness with pain obtained vital signs blood pressure 150/80 mmHg, heart rate 80x/minute, respiratory 22x/minute, temperature 36.5°C. The problem of cerebral perfusion risk is resolved, and the intervention was stopped.

Discussion

The application of therapeutic immersion of warm legs of salt and saliva mixtures against a decrease in blood pressure in hypertensive patients. Respondent suffered from hypertension for 1.5 years ago and obtained a client blood pressure score of 170/100 mmHg. Based on the research that has been done, many factors trigger the increase in high blood pressure that clients experience, including stress and age. The older a person, the risk of hypertension increases, and the walls of the arteries will experience thickening caused by the accumulation of collagen in the muscle layer, resulting in the blood vessels narrow and become stiff after the age of 40 (Hariawan & Tatisin, 2020). In addition to age factors, the sex of the respondents can also be associated with hypertension. The prevalence of hypertension in men is higher than in women (Amanda & Martini, 2018). Hypertension is more likely to affect men than women due to the existence of work problems associated with the behavior of smoking and drinking alcohol accompanied by unhealthy foods, which causes blood pressure to rise. From the evaluation results, clients said dizziness, headaches, sometimes challenging sleep, neck sensation and pain, and blood pressure 170/100 mmHg. The client's goal is to deal with health problems by resting. Based on the study results in the case following the research already carried out, signs and symptoms of hypertension are headaches, bleeding from the nose, dizziness, redness, and fatigue (Goodhart, 2016).

Based on the analysis results, the researchers formulated a risk diagnosis of perfusion of inactive cerebral tissue at risk of decreased blood circulation to the brain. Based on the diagnosis that has been established, then the intervention to be performed, the nurse is expected to be able to prioritize the problem, formulate the desired goals/results, choose the appropriate intervention, write and document the priority nursing plan is understood that this problem needs attention, as it can affect the general health status of the patient and slow the resolution of other issues. The nursing plans addressing the problem of cerebral perfusion risk are ineffective. Treatment carried out with nursing intervention is hydrotherapy of warm foot immersion mixture of salt and serai, monitoring of vital

signs, encouraging the client and family to reduce activities that can lead to increased intracranial pressure, collaboration with the staff to implement hydrotherapy of hot foot immersions of the salt mixture and serai. The author provides performing hydrotherapy immersion feet warm mixture of salt and serai aimed at lowering the client's blood pressure. Hydrotherapy is a therapeutic method that controls the body's response to water. This treatment has the benefits of preventing flu/fever, healing fatigue, smoothing blood circulation, improving immune function, and increasing body energy (Meikha, 2015). Warm foot immersion therapy of a mixture of salt and grain is one of the natural therapies aimed at improving blood circulation, reducing edema, improving muscle relaxation, relieving pain, increasing capillary permeability, giving heat to the body so that it can lower blood pressure (Uliya & Ambarwati, 2020). The author carries out the implementation according to the nursing nurse plan that has been made for 14 days with six visits with a duration of 15-20 minutes, each time performing a warm foot immersion application of a mixture of salt and serai. Hydrotherapy of sinking feet warm mixture of salt and serai was carried out for one week with performed seven times action of blood pressure decrease. The investigation differs from the author's application. The author served hydrotherapy, soaking the feet with a warm salt mixture and serai for 14 days with six times of action. After the hydrotherapy action of sinking warm feet, the client also experienced a decrease in blood pressure.

Results of blood pressure measurement before performing hydrotherapy is relatively high. And after a warm sinking of the feet with a combination of salt and serai, there is a decrease in systolic and diastolic blood pressure. Applying hydrotherapy to soak the warm legs in a mixture of salt and saliva is carried out for 15 minutes for six meetings. The author also provides the implementation of monitoring of vital signs, encouraging the client to reduce activities that could lead to increased intracranial pressure, and collaboration with the association to implement hydrotherapy of sinking feet in a warm mixture of salt and serai. With its application, hydrotherapy immerses the feet in a warm salt mixture and eliminates the risk of ineffective cerebral tissue perfusion. A decrease in blood pressure after immersion therapeutic action using warm salt-mixed water, and the client experienced a rather significant reduction of blood pressure in both systolic and diastolic blood pressure (Wulandari et al., 2016). Warm foot immersion therapy mixed with salt and serai is one of the simple and inexpensive non-pharmacological therapies that can be used to lower blood pressure in hypertensive patients (Uliya & Ambarwati, 2020). Furthermore, non-pharmacological treatments can be done by changing a healthier lifestyle and performing hydrotherapy. From the above research, the researchers argued that before giving hydrotherapy to sink the feet in a warm mixture of salt and serai, clients often complain of dizziness, anguish, pain, fatigue, and muscle tension. After receiving hydrotherapy, the client experienced a decrease in dizziness, headache, pain, fatigue, and muscle tension.

Warm foot immersions have a biological effect of heat that can cause narrowed blood vessels, resulting in improved blood circulation (Fildayanti, 2020). Physiologically, the response to heat causes the expansion of blood vessels, decreases blood clotting, reduces muscle tension, increases tissue metabolism, and increases capillary permeability. This heat response is used for therapeutic purposes for various conditions in the body. Soaking feet with warm water will make the blood vessels expand and improve blood circulation (Hasbullah et al., 2017). The salt content is essential in the extra-cellular space as the osmotic and standard blood pressure regulator. Sinking feet can help improve blood circulation and widen blood vessels so that more oxygen is supplied to the tissues that suffer from swelling (Wulandari et al., 2016). Improving blood circulation also smoothies the lymphatic system, cleansing the body of toxins. From the results of studies that have already been carried out, the influence of sinking feet in warm water containing a mixture of salt and serai has caused changes in blood pressure. Soaking the feet with warm water will expand the blood vessels and improve blood circulation, relaxing the entire blood vessel and reducing fatigue (Agung, 2015). A study supported that giving warm foot immersion can lower blood pressure due to a physiological response that limits the expansion of blood vessels, which can improve blood circulation and decrease blood thickness (Liszayanti, 2019). Muscle tension decreases, tissue metabolism increases, and capillary permeability increases. Fluids contain flavonoids that affect the work of the angiotensin-converting enzyme (ACE) that triggers vasodilatation. The above research results showed that hydrotherapy with warm legs mixed with salt and serai effectively lowered blood pressure.

Furthermore, Vitamin D deficiency is linked to hypertension and cardiovascular risk then supplementation is recommended to reduce blood pressure. In three studies, acupuncture decreased blood pressure; however, treatment was no better than an intrusive placebo in one of these studies. In two short studies, melatonin was found to be helpful. However, caution is advised for those receiving medication (Nahas, 2008). Complementary and replacement therapies have accumulated much clinical experience in enhancing EH in patients with anxiety or depressive disorders (Han, Liu, Zhong, Wang & Zhang, 2021). Based on some of the above studies, in line with the recent study that hydrotherapy affects the blood pressure of hypertensive patients if it is done with focus, well, and

correctly regularly. The study's results demonstrate clients experienced decreased systolic and diastolic blood pressure after hydrotherapy. Finally, the application of water in various therapeutic contexts, often known as hydrotherapy, probably dates back to the beginning of humankind. The practice of hydrotherapy, which is also referred to as water therapy, aquatic therapy, pool therapy, and balneotherapy, is one of the fundamental treatment modalities that is extensively utilized within the framework of natural medicine. The utilization of water in a variety of forms and at a variety of temperatures can generate a variety of impacts on the various systems of the human body.

Conclusion

The authors' implementation aims to address the diagnosis of the emerging priority and implement hydrotherapy hot foot immersion mixture of salt and water. The results of the evaluation show that the application of hydrotherapy warm foot immersions salt mixture and water during six times visits can address the problem of the risk of the ineffectiveness of cerebral tissue perfusion ineffective. Further study is needed to reevaluate the finding with the broader population.

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