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Application of Guided Imagery Therapy in Hypertension Patients at Kartini General Hospital Karanganyar

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ABSTRACT

Background: Guided imagery therapy is a technique that uses an individual's imagination with the specific aim of achieving control and relaxation. Relaxation can have a direct effect on bodily functions. The effects of relaxation include reducing muscle tension, improving concentration, lowering respiratory rate and pulse, as well as decreasing blood pressure. **Objective:** To determine the effectiveness of Guided Imagery therapy in reducing blood pressure among hypertensive patients at Kartini General Hospital Karanganyar. **Methods:** This study employed a descriptive case study approach, involving two hypertensive patients at Kartini General Hospital Karanganyar who had high blood pressure. The therapy was administered once daily for 20 minutes over a period of one day. **Results:** After undergoing Guided Imagery therapy for one day (one session of 20 minutes conducted in the afternoon), both respondents showed a reduction in blood pressure. **Conclusion:** Guided Imagery therapy has proven effective in helping to lower blood pressure among hypertensive patients and can be recommended as a management strategy for reducing blood pressure in hospital settings and the broader community.

Keywords: Guided Imagery Therapy, Hypertension, Nursing Intervention

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1. INTRODUCTION

Hypertension, known as high blood pressure, is a non-communicable disease that has become one of the leading causes of premature death worldwide (Nurjaha, 2021). It is a condition characterized by a chronic (long-term) increase in blood pressure, which may potentially lead to severe illness or even death. Hypertension is defined by blood pressure measurements showing systolic pressure › 140 mmHg and/or diastolic pressure › 90 mmHg (Salsabila, 2023).

According to the World Health Organization (WHO), it is estimated that the number of adults suffering from

hypertension nearly doubled globally over the last three decades. Globally, nearly 1 in 3 adults suffers from hypertension, with slightly higher prevalence among men than women under the age of 50. Among those above 50 years old, the prevalence reaches almost 49%, meaning 1 in every 2 individuals, with nearly equal prevalence between genders. Hypertension causes approximately 8 million deaths annually worldwide, with 1.5 million of these occurring in Southeast Asia. Nearly one-third of the population experiences hypertension, resulting in increased health burdens such as additional medical costs (WHO, 2024).

The Indonesian Ministry of Health (2024b) states that hypertension, or high blood pressure, is the number one cause of death globally, with 90–95% of cases dominated by essential hypertension. In Indonesia, hypertension is the fourth-highest risk factor for mortality, accounting for 10.2%. The proportion of hypertensive patients aged 18–59 years with central obesity, a condition characterized by excess abdominal fat, is 3.4 times higher compared to hypertensive patients without central obesity. Meanwhile, for patients over 60 years old, the proportions of those with and without central obesity are similar.

Hypertension occurs most frequently in the age groups 31–44 years (31.6%), 45–54 years (45.3%), and 55–64 years (55.2%). From a total hypertension prevalence of 34.1%, only 8.8% were diagnosed, 13.3% of those diagnosed did not take medication, and 32.3% did not take their medication regularly. This indicates that many people are unaware they suffer from hypertension and therefore do not receive treatment. Reasons for not taking prescribed medications include feeling healthy (59.8%), irregular visits to healthcare facilities (31.3%), use of traditional medicine (14.5%), alternative therapies (12.5%), forgetting to take medication (11.5%), inability to afford medication (8.1%), experiencing side effects (4.5%), and unavailability of antihypertensive drugs at healthcare facilities (2%) (Ministry of Health RI, 2024a).

In Central Java, the prevalence of hypertension reaches 37.57%. Among women, the prevalence is higher at 40.17%, compared to 34.83% among men. Urban areas show a slightly higher prevalence (38.11%) than rural areas (37.01%). Prevalence increases with age. In 2021, the estimated number of individuals aged 15 years and older affected by hypertension was 8,700,512 (30.4% of the total population in this age group), of whom 4,431,538 (50.9%) had already received

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health services (Central Java Provincial Health Office, 2021). Karanganyar Regency ranks third among all provinces in Indonesia for hypertension prevalence, with a rate of 37.6%. In Karanganyar Subdistrict, Karanganyar Regency, Central Java, the prevalence of hypertension among elderly individuals in 2023 was 9,210 people (Karanganyar District Health Office, 2023).

Efforts to manage hypertension can be carried out through non-pharmacological therapy involving lifestyle modifications and complementary therapies such as guided imagery (Bustan, 2023). Guided imagery therapy is a relaxation technique that utilizes imagination in a structured way to achieve specific therapeutic effects. In this technique, the brain is stimulated through imagination, directly influencing the nervous, endocrine, neuromodulators, and endorphins. Consequently, this method can reduce heart rate and normalize cardiac output (Sumiati, 2023).

Several studies have shown that guided imagery therapy is effective in lowering blood pressure among hypertension patients. For example, Bustan (2023) found significant differences in blood pressure before and after guided imagery therapy. Before the therapy, systolic pressure was 156 mmHg and diastolic pressure was 90 mmHg. After the therapy, systolic pressure decreased to 152 mmHg and diastolic pressure to 88 mmHg. Similarly, Trisna (2022) observed that systolic pressure was 170 mmHg and diastolic pressure was 110 mmHg before guided imagery therapy, and decreased to 160 mmHg and 100 mmHg, respectively, afterward. Asfar (2022) also reported that guided imagery therapy effectively reduced blood pressure, with systolic readings decreasing from 169 mmHg to 165 mmHg and diastolic readings dropping from 120 mmHg to 100 mmHg after therapy.

A preliminary study conducted on Monday, December 30, 2024, at Cempaka 3 Ward of Kartini General Hospital Karanganyar showed that hypertension patients are treated monthly, with a total of 37 patients admitted over the past two months, November with 17 patients and December with 20 patients, mostly elderly. According to an interview with the Head Nurse of Cempaka 3 Ward, non-pharmacological guided imagery therapy has not been implemented so far.

2. METHODS

This study employed a descriptive case study method to explore the implementation of guided imagery therapy in reducing blood pressure among hypertension patients. The primary aim

was to identify how guided imagery can be applied effectively and to describe the changes in blood pressure before and after the intervention. This approach allows for an in-depth understanding of the therapeutic process and its outcomes in a clinical setting.

The subjects of this study were two patients diagnosed with hypertension at Kartini General Hospital, Karanganyar, who met specific inclusion and exclusion criteria. Guided imagery therapy was implemented in Cempaka 3 Ward at Kartini General Hospital, Karanganyar. The sessions took place over one day, with each therapy session lasting approximately 20 minutes.

Data collection involved gathering factual information through various means, including direct observation, interviews, and medical records. Primary data were collected directly from the participants by observing patient activity levels, measuring blood pressure before and after therapy, and conducting interviews focusing on patient identification, main complaints, past and family medical history, and current symptoms. Measurements were taken before and 30 minutes after the guided imagery session. Secondary data were obtained from medical records to provide additional health-related information regarding the participants' conditions.

The collected data were processed using narrative descriptions and tabular formats. Narrative methods were used to present textual explanations, such as patient names (coded), age, and blood pressure readings. Tables were utilized to organize numerical data systematically, especially for comparing blood pressure measurements before and after the therapy.

Nursing research ethics are crucial, especially since this study involved human subjects. Therefore, ethical considerations were strictly observed. The research was conducted after obtaining approval from the Head of the Ners Profession Study Program at the Faculty of Health Sciences, Aisyiyah Universitas Surakarta, and permission from Kartini General Hospital Karanganyar. Ethical principles applied included informed consent, where respondents were given detailed information about the study and could choose to participate voluntarily; anonymity, ensured by replacing respondents' names with codes; confidentiality, guaranteed by protecting all personal information and destroying data after two years; veracity, involving honest disclosure of the study's purpose, benefits, and potential effects; self-determination, allowing respondents to

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decide their participation without pressure freely and justice, ensuring fair and non-discriminatory treatment of all participants, regardless of whether they agreed or declined to participate in the study.

3. RESULTS

The guided imagery therapy was implemented on two respondents diagnosed with hypertension, admitted to Cempaka 1 Ward at Kartini General Hospital, Karanganyar.

Respondent I (Mrs. P): Mrs. P was admitted to Cempaka 3 Ward on February 4, 2025, at 10:00 AM, presenting symptoms of nausea, vomiting, headache for two days, and general weakness. Her medical history revealed a prior diagnosis of hypertension, but she only sought treatment when symptoms appeared. She reported that her hypertension was inherited from her father. Upon physical examination, she was alert and conscious (GCS 15), with vital signs showing a blood pressure of 170/100 mmHg, pulse rate of 92 bpm, respiratory rate of 23 breaths per minute, temperature of 36.6°C, SpO_2 of 96%, weight of 68 kg, height of 160 cm, and BMI of 26.5 (overweight). Laboratory results showed normal hemoglobin levels and 100 mg/dl of blood glucose. Her prescribed medications included intravenous fluids, Omeprazole, Ondansetron, Santagesik, and oral Amlodipin.

Respondent II (Mr. S): Mr. S was admitted on February 5, 2025, at 7:00 PM, complaining of shortness of breath, abdominal pain three days prior, nausea, and dizziness. He had a known history of hypertension, which he attributed to family inheritance from both parents. He did not regularly monitor his condition. Physical examination revealed stable consciousness (GCS 15), blood pressure of 160/100 mmHg, pulse of 96 bpm, respiratory rate of 22 breaths per minute, temperature of 36.5°C, SpO_2 of 96%, weight of 66 kg, height of 165 cm, and BMI of 24 (normal weight). His lab results indicated elevated urea and creatinine levels. His treatment regimen included similar medications as Mrs. P, with Captopril instead of Amlodipin.

The implementation of guided imagery therapy to reduce blood pressure in hypertension patients was conducted on February 4, 2025, at Cempaka 3 Ward of Kartini General Hospital, Karanganyar. The therapy was administered once daily for approximately 20 minutes and involved two respondents: Mrs. P and Mr. S. The results are presented below.

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Table 1. Blood Pressure Measurement Results Before Guided Imagery Therapy

Respondents	Blood Pressure		Cotegory
	Systole	Dyastole	
Mrs. P	170 mmHg	100 mmHg	Moderate hypertension
Mr. S	160 mmHg	100 mmHg	Moderate hypertension

Based on the table 1, the blood pressure results before guided imagery therapy was carried out on Mrs. P were included in the moderate hypertension category, and Mr. S's blood pressure was included in the moderate hypertension category.

Table 2. Blood Pressure Measurement Results After Guided Imagery Therapy

Respondents	Blood Pressure		Cotegory
	Systole	Dyastole	
Mrs. P	160 mmHg	95 mmHg	Moderate hypertension
Mr. S	150 mmHg	90 mmHg	Mild hypertension

Based on the table 2, the results of blood pressure after guided imagery therapy for 20 minutes showed that Mrs. P's blood pressure was included in the moderate hypertension category, while Mr. S's blood pressure was included in the mild hypertension category.

Table 3. Results of Blood Pressure Measurement Development Before and After Guided Imagery Therapy

Respondent 1 (Mrs. P)		Decrease	Respondent 2 (Mr. S)		Decrease
Before	After		Before	After	
170/100 mmHg	160/95 mmHg	10/5 mmHg	160/100 mmHg	150/90 mmHg	10/10 mmHg

Based on the table 3, the development of blood pressure reduction before and after the application of guided imagery therapy for 20 minutes in Mrs. P showed a decrease of 10/5 mmHg but was still included in the moderate category, while in Mr. S there was a decrease of 5/10 mmHg included in the mild category.

Table 4. Comparison Results of Blood Pressure Measurements Before and After Guided Imagery Therapy

Respondent	Blood Pressure	Category	Blood Pressure	Category
Respondent 1 (Mrs. P)	170/100 mmHg	Moderate hypertension	160/95 mmHg	Moderate hypertension
Respondent 2 (Mr. S)	160/100 mmHg	Moderate hypertension	150/90 mmHg	Mild hypertension
Comparison	10/0 mmHg		10/5 mmHg	

Based on Table 4, it was found that guided imagery therapy was carried out on 2 respondents, namely Mrs. P and Mr. S, for 20 minutes; there was a decrease in blood pressure in both respondents. In Mrs. P there was a decrease but still in the

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moderate hypertension category, while in Mr. S there was a comparison before the application of the moderate hypertension category after the application of the mild hypertension category.

4. DISCUSSION

Blood Pressure Results Before Guided Imagery Therapy

Before the intervention, both respondents, Mrs. P and Mr. S, were categorized as having moderate hypertension. The session was in the afternoon, when most medical procedures for patients had already been completed.

Mrs. P showed higher baseline blood pressure compared to Mr. S. During the initial assessment, she reported difficulty sleeping and frequent headaches. She stated that she had been diagnosed with hypertension approximately five years ago, while Mr. S indicated he had suffered from hypertension for about eight years.

Both respondents were elderly (Mrs. P aged 56 and Mr. S aged 60), a known risk factor for hypertension. As individuals age, calcium metabolism regulation declines, leading to increased calcium levels in the bloodstream, potentially contributing to elevated blood pressure (Siti, 2022). Additionally, according to Liawati (2021), physiological changes such as decreased immune response, thickening and stiffening of heart valves, reduced vascular elasticity, diminished cardiac contractility, and inefficient peripheral oxygenation contribute to increased vascular resistance, making older adults more prone to hypertension.

Both respondents also admitted to poor dietary habits, particularly high salt intake. Despite being aware of her condition, Mrs. P continued consuming salty foods. Mr. S, although aware of his diagnosis, only took medication when symptoms occurred. According to research by Jingga (2022), individuals who consume salt three times daily have a 5.271 times greater risk of developing hypertension compared to those who consume it once or not at all.

In addition to poor dietary habits, both respondents exhibited unhealthy lifestyle choices. Mrs. P rarely exercised and engaged only in light activities like sweeping. Mr. S, on the other hand, was a smoker, seldom exercised, and consumed salty foods regularly. Smoking contributes to arterial stiffness, which increases blood pressure due to nicotine-induced adrenaline release (Liawati, 2021). Moreover, Rona (2023) explains that a lack of physical activity increases heart rate, placing additional strain on the heart and raising blood pressure. It also increases the

risk of obesity, which further exacerbates hypertension.

Blood Pressure Results After Guided Imagery Therapy

Following the guided imagery therapy, both respondents experienced a decrease in blood pressure, though the reduction was not highly significant. Mrs. P remained in the moderate hypertension category, whereas Mr. S improved from moderate to mild hypertension. The therapy was administered once daily on February 4 and 5, 2025, lasting approximately 20 minutes each session.

Despite the modest results, the application of guided imagery therapy demonstrated effectiveness in lowering blood pressure. Guided imagery is a non-pharmacological therapy that reduces heart rate, respiratory rate, oxygen demand, muscle tension, and metabolic rate while promoting relaxation and a sense of calm (Bustan, 2023). According to Marlena (2023), deep breathing during the therapy activates the hypothalamus, triggering the release of Corticotropin-Releasing Factor (CRF), which stimulates the pituitary gland to increase Proopiomelanocortin (POMC) production. This leads to increased enkephalin production in the adrenal medulla and the release of endorphins, which act as neurotransmitters that promote relaxation and positive mood.

Findings from previous studies support the conclusion that guided imagery therapy can effectively lower blood pressure after just one session of 20 minutes dayly.

Changes in Blood Pressure Before and After Therapy

Both respondents experienced a decrease in blood pressure following the therapy. However, the magnitude of change differed between the two. Mr. S showed a more notable improvement than Mrs. P. The researcher attributes this difference partly to gender-related factors. According to Salsabila (2023), postmenopausal women are at higher risk for hypertension due to declining estrogen levels, which protect blood vessels from damage. Estrogen quality naturally deteriorates with age, typically between 45 and 55. In contrast, men are more susceptible to hypertension at younger ages due to the absence of hormonal protection, greater exposure to unhealthy lifestyles, and physiological differences such as visceral fat accumulation and increased sensitivity to stress and salt intake (Connelly & Delles, 2023).

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Comparison of Blood Pressure Before and After Therapy

Both respondents showed a decrease in blood pressure after the guided imagery session. While Mrs. P remained in the moderate hypertension category, Mr. S moved to the mild category. The relatively small reduction may be attributed to comorbidities and ongoing pharmacological treatment. Rizqiya (2023) explains that comorbid conditions can worsen overall health status and reduce quality of life, possibly limiting the effectiveness of non-pharmacological interventions alone.

5. CONCLUSION

Based on the implementation of guided imagery therapy on two hypertension patients at Kartini General Hospital, Karanganyar, it was concluded that both respondents showed a decrease in blood pressure after the therapy, although the improvement varied. Before the intervention, both were categorized as having moderate hypertension. After the therapy, Mrs. P remained in the moderate category, while Mr. S improved to mild hypertension. This indicates that guided imagery therapy has a positive effect in lowering blood pressure. For future researchers, this study can serve as a reference to further develop guided imagery therapy for hypertension patients. It is also recommended that healthcare institutions and nursing professionals promote this therapy as part of patient education and non-pharmacological interventions. Lastly, patients are encouraged to practice guided imagery independently as a self-help technique during episodes of high blood pressure.

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AUTHOR CONTRIBUTIONS

The author contributes in conceptualization, data collection and analysis Dinda Rahmawanti, Mulyaningsih, Dewi Listyorini. Writing and manuscript revisions: Dinda Rahmawanti, and Mulyaningsih.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available upon reasonable request from the corresponding author.

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