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The Combination of Slow Deep Breathing and Qur'anic Murottal Therapy in Reducing Blood Pressure in Hypertension: A Case Study

Adellia Andria Puspita, Anis Ika Nur Rohmah*
Department of Nursing, Faculty of Health Sciences, University of Muhammadiyah Malang, Malang, Jawa Timur, Indonesia

Corresponding author: anisikanur@umm.ac.id

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ABSTRACT

Hypertension is a non-communicable disease that often occurs without symptoms and is a leading cause of premature death. In addition to persistently elevated blood pressure, hypertensive patients frequently experience unstable blood pressure variability (BPV), both short- and long-term. While antihypertensive medications are effective, they often cause undesirable side effects. Therefore, a safe and practical non-pharmacological approach is needed, such as slow deep breathing techniques and Qur'anic murottal therapy. This study aims to explore the effect of combining slow deep breathing and Qur'anic murottal therapy on blood pressure in hypertensive patients. This research used a descriptive approach with a case study method involving one hypertensive patient who met the inclusion criteria, namely having a blood pressure >140/90 mmHg, no hearing impairment, and having provided informed consent. The intervention was carried out once daily for 30 minutes over three consecutive days. The intervention followed the SOP for slow deep breathing combined with Qur'an murottal therapy. Blood pressure was measured before and after each session. There was a consistent decrease in blood pressure, pulse rate, and respiratory rate over the three-day period. These findings suggest that the combined therapy promotes relaxation and lowers blood pressure. The stable reduction also indicates its potential in managing blood pressure fluctuations. Further research with a quantitative design and a larger sample size is recommended to strengthen the generalization of results and support the broader application of this therapy in various healthcare settings.

INTRODUCTION

Hypertension is a non-communicable disease (NCD) that is the main cause of premature death that rarely causes symptoms 2 (Silent Killer) because it is often without complaints (WHO, 2023). Headache, discomfort or soreness in the nape of the neck, spinning sensation like falling, palpitations or faster heartbeat, and ringing in the ears are the most common complaints submitted by people with hypertension (Dafriani et al., 2023). Unstable blood pressure fluctuations are often encountered in hypertensive patients and are known as blood pressure variability (BPV) or labile hypertension. This phenomenon reflects unpredictable changes in blood pressure, both in the short term (beat-to-beat, daily), and long term (visit-to-visit) (Schutte et al., 2022)

In 2023, the number of people suffering from hypertension increased significantly, according to the World Health Organization (WHO), About 1.5 billion people worldwide are projected to suffer from hypertension by 2025 (WHO, 2024). In addition, hypertension and its complications are estimated to cause 9.4 million deaths each year (Kemenkes, 2019). The prevalence of hypertension in people aged> 18 years reached 30.8% in 2023 (Kemenkes, 2023). In East Java Province, there are 11,702,478 people with hypertension aged more than 15 years, with the proportion of men 48.8% and women 51.2% (East Java DHO, 2023) . Malang District has

the second highest prevalence of hypertension of all districts/cities in East Java Province (Malang District Health Office, 2022).

Hypertension works by activating the renin-angiotensin-aldosterone system and sympathetic activity that causes vasoconstriction and changes in the blood vessel wall. Stroke, heart attack, heart failure, kidney damage, and many other health problems (PAHO, 2023). An increase in blood pressure of 20 mmHg systole and 10 mmHg diastole doubles the risk of health problems. A 5 mmHg increase in diastole blood pressure is associated with a 35-40% increased risk of stroke (Muflih & Halimizami, 2021). Individuals over 60 years old with a blood pressure of 160/90 mmHg have twice the risk of stroke, three times the risk of heart attack, and 2.5 times the risk of coronary heart disease. This indicates a significant increase in cardiovascular burden and risk as blood pressure rises (Kokasih et al., 2024).

The global target for noncommunicable diseases is to reduce the prevalence of hypertension by 33% (WHO, 2023). Hypertension treatment includes pharmacological and non-pharmacological therapies. Pharmacologic therapy involves the administration of antihypertensive drugs that have a fast reaction to lower blood pressure, but can cause side effects. Common side effects are headache, dizziness, flushing, swelling in the legs and arms, while serious side effects are chest pain (Indriani et al., 2022). Meanwhile, nonpharmacological therapy can be in the form of distraction techniques, namely slow deep breathing and murottal qur'an (Suaib et al., 2025; Wahyuningsih et al., 2024).

Slow deep breathing is one of the complementary therapies that is significantly 3 effective in reducing blood pressure values in people with hypertension (Verma & Verma, 2024). According to (Novriani & Johan, 2020) slow deep breathing for 30 minutes has an effect on lowering blood pressure, both systolic and diastolic blood pressure. Slow deep breathing can increase baroreflex sensitivity and reduce sympathetic and chemoreflex activity, so it has the potential to have a positive effect in handling hypertension (Azhari, 2019). Slow deep breathing helps relieve the heart's workload by increasing oxygen supply, lowering heart rate, and ultimately lowering blood pressure. This technique also stimulates diaphragmatic breathing and activates the relaxation center in the brain, thus having a positive impact on overall body physiology (Novriani & Johan, 2020). Slow deep breathing has advantages not only in terms of effectiveness, but also because it is practical and economical. According to Cahyaningrum (2023) in his study, this method is easy to implement, affordable, and very suitable for use in health services with limited resources.

The Qur'an is a form of nonpharmacological therapy that plays a role in relieving stress and increasing feelings of happiness in a person's life. Listening to Qur'ānic recitations can affect the body's physiological responses, whether or not individuals understand Arabic. Murottal Qur'an has been shown to reduce depression, sadness, provide calmness, and help stabilize the rhythm of the body system, thus playing a role in supporting the healing process (Lastaro et al., 2023). In terms of health, the recitation of the Qur'an can activate the endorphin hormone naturally so that it can make feelings relaxed (Oktalina et al., 2020)

Qur'anic therapy stimulates the auditory organs and limbic system. The hypothalamus is encouraged to release alpha brain waves, which in turn, stimulates the release of neurotransmitters such as serotonin and endorphins, inducing a state of relaxation in patients (Trisnawati et al., 2021). Supported by research (Wahyuningsih et al., 2024)revealed that patients showed an increase in alpha brain wave activity, indicating a calmer and more relaxed state, after listening to murottal auditory therapy. Murottal therapy using Qs. Ar Rahman with Muzammil Hasballah's qory which has been validated in the physics laboratory FMIPA Jenderal Soedirman University which has a tempo of 95.99 per minute played through a digital media player and earphones for 15 minutes (Wirakhmi et al., 2018). Murottal Surat Ar Rahman works as a relaxation therapy by activating positive waves in the brain through the lilting character of the sound. This sound stimulation corresponds to the natural frequency of the body's cells, causing resonance that triggers cell activity to send signals to the glands. This process stimulates the release of endorphins, which cause a sense of relaxation. In a relaxed state, epinephrine levels decrease, so blood pressure also decreases (Harmawati et al., 2020)

The combination of slow deep breathing and Qur'anic murottal therapy is expected to have a stronger synergistic effect than if applied separately. This intervention not only lowers blood pressure through breathing regulation and stress control, but also provides inner calm and spiritual support. The aim of this study was to assess the effect of the combination of the two therapies on blood pressure in hypertensive patients. The results are expected to provide a scientific basis for the development of holistic nursing interventions that integrate physiological and spiritual approaches.

METHOD

This study used a qualitative research design with a descriptive approach through the case study method (case report). The intervention provided was a combination of slow deep breathing techniques with murottal Al-Qur'an, which was applied to one respondent who was identified as having hypertension. This research was conducted on April 25, 2025, located in the Pakis District area.

The respondent in this study was Mrs. N aged 60 years with a history of hypertension for 4 years. Inclusion criteria in this study include respondents who are cooperative, have full consciousness, blood pressure > 140/90 mmHg, do not have hearing loss, have good communication skills, and are identified as Muslims. Exclusion criteria included respondents who were mentally or emotionally disturbed, did not complete the intervention until the end, were unable to perform relaxation or breathing exercises, had medical complications such as stroke or heart disease, had hearing loss, had low blood pressure, were non-Muslim, and respondents who were not willing to participate.

The research instrument used is the SOP Combination of Slow deep breathing with Murottal Qur'an. As an initial step in data collection, researchers conducted an assessment by introducing themselves and building a trusting relationship (BHSP). Researchers also provide an explanation of the interventions that will be carried out on respondents, convey information related to health education, and ask for the patient's willingness to participate. In addition, the researcher submitted informed consent as a form of approval from the patient and agreed on an appointment or time contract before the implementation of the health intervention began.

Before the intervention, the researcher measured blood pressure. Blood pressure was measured using a tensimeter. The combination of Slow deep breathing with Murottal Qur'an was carried out for 30 minutes, once a day, namely in the morning for 3 consecutive days. Respondents were given an audio player (MP3 player) along with earphones to listen to the chanting of Surah Ar-Rahman recited by Qari Muzamil Hasballah. The murottal volume was set at 50 decibels (below 60 dB) to ensure comfort and support the relaxation effect (Wahyuningsih et al., 2024). The use of 5 earphones allows murottal sounds to be played in a frequency range of 5 Hz to 22,000 Hz, which can optimally influence brainwave activity and contribute to lowering stress levels. After the intervention, blood pressure was measured again.

Slow deep breathing is a breathing technique with a frequency of less than 10 breaths per minute, where the exhale phase lasts longer than the inhale phase (Helpitnati, 2023). In addition to blood pressure, other physiological parameters measured include the pulse rate and respiratory frequency of respondents. Measurement of pulse rate and breath frequency in the slow deep breathing intervention has an important role because both reflect the autonomic nervous system's response to relaxation. This technique directly affects parasympathetic activity and decreases sympathetic activity, which results in a decrease in breath frequency and heart rate. These two parameters are markers of physiological relaxation. Decreased heart rate reflects improved heart rate variability (HRV) as an indicator of better autonomic balance (Chaiduang et al., 2024; Natarajan et al., 2023). Meanwhile, a reduction in breath frequency indicates that individuals are effectively practicing slow breathing techniques, which contribute to improving baroreflex sensitivity and lowering blood pressure (Candrawati et al., 2025; Larson et al., 2020)

Changes in these two parameters are also associated with decreased levels of stress hormones such as cortisol and epinephrine, which contribute to blood pressure stabilization (Natarajan et al., 2023). Thus, the measurement of pulse rate and breath frequency is not only relevant, but also essential as indicators of the physiological success of the slow deep breathing intervention. In addition, respondents' demographic identities such as age, gender, and other characteristics were also documented for further analysis. Data collection was done systematically to evaluate the effectiveness of the intervention on the physiological condition of the respondents.

The documentation of research activities conducted over three days is presented to demonstrate the involvement of both respondents and researchers throughout each stage of the intervention. This documentation serves as empirical evidence and reinforces the validity of the research findings. For example, it can be seen in Figure 1.

Figure 1. Activity Documentation

RESULTS

The research findings presented in the following section constitute a summary of the main observations obtained over three days. The data are systematically organized to illustrate the development, changes, and consistency of the respondents' conditions in line with the research objectives. Accordingly, these results are expected to provide a clear and accurate scientific overview that can serve as a basis for discussion and conclusion-making. For example, it can be seen in Table 1.

Table 1 Evaluation Result for 3 Days

Indicator	Day 1		Day 2		Day 3	
	Pre	Post	Pre	Post	Pre	Post
Blood Pressure	150/94 mmHg	136/80 mmHg	142/90 mmHg	130/80 mmHg	140/90 mmHg	128/80 mmHg
Heart Rate	92 x/min	86 x/ min	90 x/ min	82 x/ min	89 x/ min	80 x/ min
Respiration Rate	22 x/ min	20 x/ min	22 x/ min	21 x/min	23 x/ min	20 x/ min

The figure 2 below presents a graph of evaluation results over three days, covering systolic blood pressure, diastolic blood pressure, pulse, and respiratory rate in hypertensive patients. Measurements were taken before (pre) and after (post) the intervention each day.

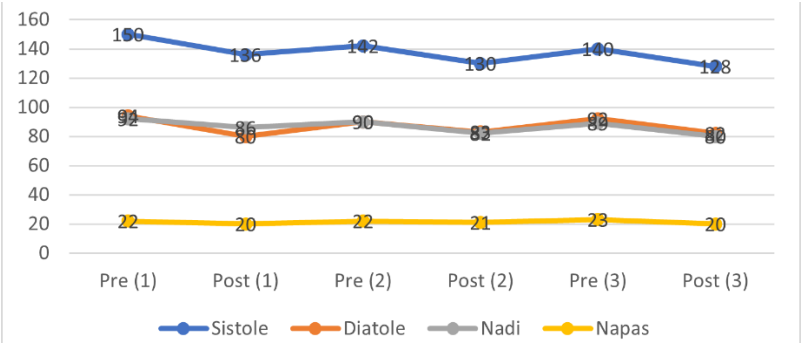

Figure 2. Evaluation Result for 3 Days

A clinical evaluation was conducted over three consecutive days to assess the effectiveness of an intervention on three vital parameters: blood pressure, pulse rate, and respiratory rate. Measurements were taken before and after each daily intervention session. The results demonstrated a consistent improvement across all indicators, suggesting a positive physiological response. Notably, blood pressure showed a significant and gradual decrease throughout the intervention period. Overall, the intervention resulted in gradual improvements in all three vital signs, reflecting stabilization of the cardiovascular and respiratory systems. These findings suggest that the intervention was effective in enhancing the patient's physiological status over the short observation period.

DISCUSSION

This study involved respondents aged 60 years with a history of hypertension 4 years ago. This is in line with data from the 82 80 20 Post (3) majority of the elderly population has high blood pressure (Kim et al., 2024; Muli et al., 2020) Korea Hypertension Fact Sheet 2023, the prevalence of hypertension in the population aged ≥60 years reached around 40% of the total hypertensive patients, increasing from only 22.5% in 1998 to 39.6% in 2020. This data confirms that the majority of the elderly population has high blood pressure (Kim et al., 2024; Muli et al., 2020)

Respondents in this study were not adherent to their own medication. A global meta-analysis study (2010-2020) showed that 27-40 % of hypertensive patients were generally non-adherent to treatment, with a higher proportion (45 %-83.7 %) in patients 7 with uncontrolled blood pressure (Hossain et al., 2025). Several regional studies have also reported high non-adherence rates, for example 62.5% in Asia and Africa and 63.4% in Pakistan based on pill-counting (Arshed et al., 2025). The severity of blood pressure elevation, as well as the duration of undiagnosed and undertreated hypertension, strongly influences organ damage caused by hypertension complications (Siregar et al., 2023)

Non-adherence to treatment is one of the main problems often found in patients with hypertension during pharmacological therapy (Sundari et al., 2024). Non-compliance can occur in patients who do not understand the instructions given by health workers, patients who cannot redeem prescription drugs, patients who choose not to use their drugs, patients who often forget to use their drugs, medicinal products are not available at health facilities, and patients who cannot swallow or use drugs properly (Unair, 2023). Handling hypertension can be done through the implementation of a healthy lifestyle and compliance in taking antihypertensive drugs according to the prescription and recommended dose. This compliance plays an important role in achieving effectiveness therapeutic (Sundari et al., 2024).

Slow deep breathing exercises can increase the body's oxygen saturation and consumption, which stimulates nitrite oxidation. This process has a calming effect on the nervous system and increases the elasticity of blood vessels, thus contributing to lower blood pressure (Pratiwi, 2020). The results of this study are relevant to several other supporting studies. Slow deep breathing (10 breaths/minute for 4 weeks) in hypertensive patients was shown to consistently reduce systolic (~7 mmHg), diastolic (~3.4 mmHg), and heart rate (~2.4 bpm) blood

pressure increasing heart rate variability (HRV), (mean arterial pressure / MAP, lowering blood pressure, and reducing salivary cortisol levels, indicating positive modulation of hormonal and autonomic systems (Chaiduang et al., 2024; Natarajan et al., 2023; Yuenyongchaiwat et al., 2024)

The results of the study (Nafiah et al., 2020) showed that there was a significant difference in systolic and diastolic blood pressure before and after slow deep breathing with a p value <0.05. In line with research (Azhari, 2019) states that there is an effect of slow deep breathing on the blood pressure of hypertensive patients at Puskesmas Simpang IV Sipin Jambi City. In a meta analysis published by IPM Journal, it was stated that several studies stated that patients who underwent slow deep breathing for ≥4 weeks showed improved blood pressure control, allowing adjustment of drug doses or a reduction in tone, and the amount of medication consumed. Although it does not replace pharmacological therapy completely, this intervention acts as an effective supporting therapy in stabilizing blood pressure and reducing dependence on antihypertensive drugs, of course with close medical monitoring (Andri et al., 2021)

In a study conducted In a study conducted by (Harmawati et al., 2020), it was found that Qur'anic murottal therapy, especially surah Ar-Rahman, had a significant effect on lowering blood pressure in patients with hypertension. Quasi-experimental research on menopausal women with hypertension in Purwakarta Regency showed that Qur'anic murottal therapy Surah Ar-Rahman for 30 minutes every day for 4 weeks succeeded in reducing the average systolic blood pressure by 10.5 mmHg and diastolic pressure by 7.4 mmHg ($p < 0.05$), much greater than the control group (Humaeroh, 2024).

This journal has several limitations, including the small number of respondents and the limited research period, which means the findings may not be generalizable to a wider population. In addition, the study only used one measurement parameter, namely blood pressure, without taking into account other factors that might influence the results, such as dietary habits, stress levels, or the respondents' physical activity. Furthermore, the study design was limited to a single case study approach, which inherently restricts the ability to establish causality or compare outcomes across different groups. Future research with a larger sample size, a longer observation period, and multiple measurement parameters is recommended to validate and expand upon these findings.

CONCLUSION

The combined intervention of slow deep breathing and Qur'anic murottal therapy in a hypertensive patient demonstrated a gradual and consistent reduction in blood pressure over a three-day period. This intervention was also accompanied by a decrease in pulse rate and respiratory frequency, indicating a relaxation response of the autonomic nervous system. This study is exploratory in nature, integrating slow deep breathing with Qur'anic murottal therapy as an intervention to measure its impact on blood pressure. These findings support the application of a multimodal, non-pharmacological approach that incorporates both physiological and spiritual interventions in the management of hypertension, particularly by taking into account the cultural and religious dimensions of the patient.

As this study serves as an exploratory investigation, the conclusions drawn are preliminary and should not be generalized. The primary aim was to explore possible patterns and generate insights that can inform the development of hypotheses and the design of future studies with broader and more robust methodologies. Specifically, this study sought to observe the potential combined effects of slow deep breathing and Qur'anic murottal therapy on reducing blood pressure in a patient with hypertension, recognizing that the integration of physiological relaxation techniques with spiritual or faith-based interventions may offer unique therapeutic benefits. While initial observations suggested a positive trend in lowering blood pressure, these findings should be interpreted with caution, as they are derived from a single-case design and a limited research period. Future research with larger and more diverse populations, longer observation durations, and comparative study groups will be essential to validate these early findings and determine whether the combination of slow deep breathing and Qur'anic murottal therapy can be reliably

recommended as a complementary approach for hypertension management. Nursing practitioners are expected to utilize the combination of slow deep breathing and murottal therapy as an easy, inexpensive, and effective complementary therapy to help reduce blood pressure and improve the quality of life of hypertensive patients.

AUTHOR'S DECLARATION

Authors' contributions and responsibilities

AAP: Writing Original Draft, Conceptualization, Data Collection, Formal Analysis.
AINR: Supporting Draft, Review and Editing.

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Availability of data and materials

All data and supporting materials for this study are available and can be requested directly from the corresponding author.

Competing interests

The authors declare no competing interests.

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