

Combined Effect of Hydrotherapy and *Al-Kahfi Murottal* Recitation on Blood Pressure in Elderly Hypertensive Patients

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Abstract

Background: Hypertension is a prevalent health issue among older adults, significantly increasing their risk of mortality. Hydrotherapy, in conjunction with the recitation of *Surah Al-Kahfi* (a chapter from the Quran), offers a non-pharmacological approach to blood pressure management. This combined therapy is believed to reduce stress hormones and stimulate the release of endorphins, contributing to blood pressure reduction. This study aimed to investigate the effect of this combined therapy on blood pressure in older adults with hypertension. **Methods:** A pre-experimental, one-group pre- and post-test design was employed. Participants were recruited using purposive sampling. The study population comprised older adults aged 60-70 years with blood pressure \geq 140/90 mmHg. Blood pressure measurements were taken using a digital sphygmomanometer, and a standardized operating procedure (SOP) was followed for all interventions. Data was analyzed using the Paired Sample T-test. **Results:** The findings revealed a statistically significant difference in both systolic and diastolic blood pressure before and after the intervention ($p = 0.000$). The mean difference in systolic blood pressure was 14.1 mmHg, and the mean difference in diastolic blood pressure was 8.4 mmHg. **Conclusion:** The combined therapy of hydrotherapy and recitation of *Surah Al-Kahfi* effectively reduces blood pressure in older adults with hypertension. These findings encourage further exploration of this non-pharmacological approach in managing hypertension among older adults.

Keywords: *Al-Kahfi Murottal*, Combination Hydrotherapy, Elderly, Hypertension

1. INTRODUCTION

The World Health Organization (WHO) projects that the global elderly population will reach 1.2 billion by 2025. This demographic shift brings with it an increase in age-related health challenges, notably hypertension. Hypertension prevalence is highest among older adults (Berta Afriani, 2023). According to the WHO (2020), 26.4% of the elderly population has hypertension. In Indonesia, the prevalence of hypertension among older adults in 2020 was 57.6% for those aged 65-74 years and 63.8% for those over 75 years. In Central Java, hypertension prevalence in 2020 was 32.5%, with the highest rate in Semarang City observed among individuals aged 45-65 years (117,224 cases) (Nurvita S, 2022).

Hypertension significantly impacts quality of life, compromising independence and the ability to perform daily activities (Yuswatiningsih E, 2021). It is a serious health concern linked to premature death due to cardiovascular complications, kidney disease, stroke, and vision impairment. Therefore, effective blood pressure management is crucial, and non-pharmacological approaches are gaining popularity due to their accessibility, affordability, and minimal side effects (Husen LMS, 2022).

This study explores the combined effect of hydrotherapy and Quranic recitation on blood pressure in older adults with hypertension. Hydrotherapy, or soaking feet in warm

water, promotes relaxation and stimulates the release of endorphins, which have been shown to lower blood pressure (Novari, 2021). This simple, “low-tech” approach (Dilianti IE, 2017) is combined with the recitation of *Surah Al-Kahfi*, a chapter from the Quran, to enhance relaxation and promote a sense of calm. Quranic recitation has been recognized for its meditative and suggestive qualities, offering spiritual support and promoting well-being (Ardiastuti & Rejeki, 2021).

Surah Al-Kahfi, known for its themes of peace and tranquillity, may offer a form of spiritual relaxation therapy, addressing mental and emotional stressors that can contribute to hypertension. Research by Fernalia et al. (2020) demonstrated the positive impact of *Surah Al-Kahfi* recitation on reducing blood pressure in older adults.

While previous research has explored the effects of Quranic recitation combined with other therapies (Hestiani Rumakamar, 2022), the combined effect of hydrotherapy and *Surah Al-Kahfi* recitation on blood pressure has not been investigated. This study aims to address this gap by examining the changes in blood pressure among older adults with hypertension before and after the combined therapy.

2. LITERATURE REVIEW

The term “elderly” typically refers to individuals over 60 years of age. Research indicates that hypertension in older adults is often linked to age-related changes in blood vessels, particularly in the heart. As people age, their arteries become less elastic and more rigid, increasing the workload on the heart and contributing to elevated blood pressure (Nurbaya, 2023).

Hypertension, or high blood pressure, is a chronic condition characterized by persistent elevation of blood pressure against the arterial walls. It is generally defined as systolic blood pressure above 140 mmHg and diastolic blood pressure above 90 mmHg (Berta Afriani, 2023). Blood pressure, the force exerted by blood against the artery walls, tends to rise with age, so normal blood pressure ranges are adjusted for older adults (Dumalang ER, 2022). Various factors influence blood pressure, including age, gender, body weight, dietary habits, smoking, lifestyle, and alcohol consumption (Naryati N, 2022). Blood pressure is typically measured using a sphygmomanometer, with digital devices being commonly used (Zuhdi M, 2020).

Hydrotherapy, formerly known as hydrophathy, is a therapeutic method that utilizes water to treat or alleviate pain. In this study, hydrotherapy involves a “low-tech” approach where participants immerse their feet in a bucket of warm water (Novari, 2021). The

therapeutic effect is achieved through the transfer of heat from the warm water (40.5-43°C) to the body, promoting vasodilation and reducing muscle tension. Following established protocols, the feet are immersed up to 10-15 cm above the ankles for 13 minutes (Sari SM, 2022).

Murottal therapy is a non-pharmacological intervention involving listening to Quranic recitation. In this study, participants listened to a recitation of *Surah al-Kahfi*, a chapter from the Quran known for its calming and spiritually uplifting qualities. This therapy aims to reduce stress hormones, activate endorphins, and promote relaxation, contributing to blood pressure reduction (14). The *murottal* recitation used in this study was by Ustadz Hanan Attaki, and participants listened to it using headphones for five consecutive days (Ardiastuti & Rejeki, 2021)

3. METHODS

This study employed a pre-experimental, one-group pre- and post-test design to investigate the effect of combined hydrotherapy and *murottal* recitation of *Surah Al-Kahfi* on blood pressure in older adults with hypertension. Participants were recruited using purposive sampling, with inclusion criteria of hypertension with blood pressure > 140/90 mmHg, age 60-70 years, and no hearing impairment. Blood pressure (BP) was measured using a digital sphygmomanometer before (pre-test) and 15 minutes after (post-test) the intervention. The intervention consisted of 13 minutes of foot immersion in warm water while simultaneously listening to a *murottal* recitation of *Surah Al-Kahfi*. This procedure was carried out for five consecutive days. Following data collection, statistical analysis was performed using the Paired Sample T-test to assess the impact of the intervention on blood pressure.

4. RESULTS

1) Respondent Characteristics

This study, conducted from November 1, 2023, to July 31, 2024, investigated the effect of combined hydrotherapy and *murottal* recitation of *Surah Al-Kahfi* on blood pressure in older adults with hypertension at the Sekaran Health Centre. A total of 14 participants who met the inclusion criteria were enrolled in the study.

Table 1. Distribution of Respondents Based on Age, Gender, and Food in the Elderly at Sekaran Health Centre Semarang (n=14)

Variable	Frequency (n)	%
Age		
Mean \pm SD (Min-Maks)	66.6 \pm 3.1	60.0 – 70.0
Gender		
Male	3	21.4
Female	11	78.6
Food		
Controlled	4	28.6
Uncontrolled	10	71.4

Table 1 presents the demographic characteristics of the study participants. The average age of the participants was 66.6 years. Most participants were female (n=11, 78.6%). The majority of participants (n=10, 71.4%) reported not adhering to any dietary restrictions related to their hypertension.

2) Blood Pressure Before and After Intervention

Table 2. Descriptive Statistics of Blood Pressure in the Elderly Before and After Intervention (n=14)

Blood Pressure	Mean	Median \pm SD	Min-Max
Before			
Systolic	162.4	158.5 \pm 10.9	151-185
Diastolic	101.1	96.5 \pm 11.4	90-124
After			
Systolic	147.6	148.0 \pm 9.1	131-163
Diastolic	92.7	90.0 \pm 9.9	83-111

Table 2 presents the pre- and post-test blood pressure measurements. The average systolic blood pressure before the intervention was 162.4 mmHg, and the average diastolic blood pressure was 101.1 mmHg. Following the combined hydrotherapy and murottal recitation intervention, there was a notable decrease in both systolic and diastolic blood pressure. The average systolic blood pressure decreased to 147.6 mmHg, and the average diastolic blood pressure decreased to 92.7 mmHg. These preliminary findings suggest that the combined intervention may be effective in reducing blood pressure in older adults with hypertension.

3. Effect of Combination Therapy of Hydrotherapy and Murottal Surah Al-Kahfi on Elderly with Hypertension

Table 3. Paired t Test

Blood Pressure	Mean difference	Standard Deviation	<i>t</i>	<i>p</i>
Systolic	14.9	8.1	6.852	0.000
Diastolic	8.4	4.3	7.379	0.000

The results of the Paired Sample T-test, presented in the table above, revealed a statistically significant difference in both systolic and diastolic blood pressure before and after the combined intervention ($p = 0.000$; $p < 0.05$). This finding indicates that the combination of hydrotherapy and murottal recitation of Surah Al-Kahfi had a significant effect on reducing blood pressure levels in older adults with hypertension at the Sekaran Health Center.

5. DISCUSSION

The study participants had an average age of 66 years. Age is a significant risk factor for hypertension due to age-related physiological changes in the cardiovascular system. As people age, the heart, blood vessels, and hormonal regulation undergo changes that can lead to increased vascular stiffness and elevated blood pressure. This finding is consistent with research by Nurhayati et al. (2023), which demonstrated a significant correlation between age and the incidence of hypertension.

The majority of participants (78.6%) were female. Gender also plays a role in hypertension risk, particularly in postmenopausal women who experience a decline in oestrogen levels. Oestrogen is believed to have a protective effect against hypertension by increasing high-density lipoprotein (HDL) cholesterol, which helps prevent atherosclerosis. The decrease in oestrogen after menopause can contribute to lower HDL levels, promoting atherosclerosis and increasing the risk of hypertension (Nurhayati, 2023).

Most participants (71.4%) reported not following a hypertension-specific diet, with many finding it difficult to avoid salty and fatty foods. High sodium intake can lead to fluid retention, increasing blood volume and blood pressure. This finding aligns with research by Mifta Hulzana et al. (Yunus, 2023), which showed a significant relationship between salt consumption patterns and hypertension in older adults. Similarly, excessive fat intake, particularly saturated and trans fats, can raise low-density lipoprotein (LDL) cholesterol levels, contributing to atherosclerosis and impairing blood vessel elasticity. This can lead to increased blood volume and blood pressure, as demonstrated in research by Mangerongkonda (2021).

The average systolic blood pressure of participants before the intervention was 162.4 mmHg, and the average diastolic blood pressure was 101.1 mmHg. While blood pressure tends to rise with age, it is also influenced by modifiable factors such as diet, exercise, stress, alcohol consumption, and smoking. The degenerative changes associated with aging, including decreased vascular elasticity, stiffening of heart valves, and reduced cardiac output,

can further contribute to elevated blood pressure. Calcification of blood vessels, often a result of long-term fat deposition, can exacerbate these age-related changes.

Following the combined hydrotherapy and *murottal* recitation intervention, the average systolic blood pressure decreased to 147.6 mmHg, and the average diastolic blood pressure decreased to 92.7 mmHg. The Paired Sample T-test confirmed a statistically significant difference in both systolic and diastolic blood pressure before and after the intervention ($p = 0.000$; $p < 0.05$). These findings support the hypothesis that the combined therapy is effective in reducing blood pressure in older adults with hypertension.

The observed blood pressure reduction can be attributed to the mechanisms of both hydrotherapy and *murottal* recitation. Hydrotherapy, in this case, warm water foot soaks, works through conduction, transferring heat to the body and promoting vasodilation. This improves microcirculation and stimulates parasympathetic nerve activity, leading to blood pressure reduction (Sari SM, 2022).

Murottal therapy, the recitation of the Quran, offers a non-pharmacological approach with meditative, suggestive, and relaxation effects. The recitation of *Surah Al-Kahfi*, in particular, is believed to stimulate the hypothalamus and pituitary gland to release endorphins and suppress stress hormones. This can lead to the inhibition of angiotensin, a hormone that contributes to blood pressure elevation (Mulyadi A, 2018).

The combination of hydrotherapy and *murottal* recitation provides a multi-faceted approach to blood pressure management, addressing both physiological and psychological factors. This non-pharmacological intervention is safe, accessible, and has the potential to be incorporated into self-care routines for older adults with hypertension.

6. CONCLUSION

1. The majority of participants were female (78.6%) with an average age of 66 years. Most participants (71.4%) did not follow a controlled diet for their hypertension.
2. The average systolic blood pressure of participants before the intervention was 162.4 mmHg, and the average diastolic blood pressure was 101.1 mmHg. Following the intervention, these values decreased to 147.6 mmHg (systolic) and 92.7 mmHg (diastolic).
3. Statistical analysis revealed a significant difference in both systolic and diastolic blood pressure before and after the combined intervention of hydrotherapy and *murottal* recitation of *Surah Al-Kahfi* ($p = 0.000$; $p < 0.05$). The mean difference in systolic blood pressure was 14.1 mmHg, and the mean difference in diastolic blood pressure was 8.4

mmHg. This finding supports the conclusion that the combined therapy is effective in reducing blood pressure in older adults with hypertension.

7. LIMITATION

This study has several limitations that should be acknowledged. First, the sample size was relatively small (n=14) for an experimental study. Although the researcher initially recruited 15 participants, one was excluded due to an inability to adhere to the 5-day intervention schedule. A larger sample size would have increased the statistical power of the study and enhanced the generalizability of the findings.

Second, the study did not control for dietary factors that could influence blood pressure. Participants' dietary habits were not monitored or restricted, which could have introduced variability in the blood pressure measurements. Future research could consider incorporating dietary controls or collecting detailed dietary information to assess the potential impact of diet on the intervention's effectiveness.

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