Sukarmin, S. et al. (2025)
Jurnal Keperawatan Soedirman – Vol 20, No 3 page 200-205
http://jos.unsoed.ac.id/index.php/jks/index

ORIGINAL ARTICLE

THE EFFECT OF THE ISLAMIC EMOTIONAL RESILIENCE MODEL INTERVENTION ON BLOOD PRESSURE AND SPIRITUAL WELL-BEING IN HYPERTENSIVE PATIENTS

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Article Information
Received: 31 January 2025
Revised: 8 May 2025
Accepted: 31 October 2025

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DOI
10.20884/1.jks.2025.20.3.14850

ABSTRACT

Hypertension remains a global health challenge. Hypertensive patients frequently suffer high distress and spiritual issues that should be managed, one of interventions is Islamic emotional resilience. The study aimed to examine the impact of the Islamic Emotional Resilience Model on blood pressure and spiritual well-being. This study was a randomized controlled trial (RCT) involving 100 hypertensive patients, with 50 respondents in the intervention group and 50 in the control group. The intervention group received an Islamic Emotional Resilience intervention for three weeks, while the control group continued taking antihypertensive medication. The results demonstrated a significant effect of the *i* Emotional resilience model on systolic blood pressure ($p < 0.001$), diastolic blood pressure ($p < 0.001$), and spiritual well-being ($p < 0.001$). In the control group, there was a significant difference in systolic blood pressure before and after the study ($p < 0.001$), diastolic blood pressure ($p<0.001$), but no significant change in spiritual well-being ($p=0.939$). Islamic Emotional Resilience Model serves as an important complementary approach in managing hypertensive patients.

Keywords: *Blood pressure; Islamic emotional resilience model; spiritual well-being*

ISSN : 1907-6637 **e-ISSN : 2579-9320**

BACKGROUND

Hypertension remains a major global health issue despite the availability of numerous antihypertensive medications. It is estimated that 1.28 billion people aged 30 to 79 worldwide suffer from hypertension, with two-thirds of them residing in low- and middle-income countries. Approximately 46% of individuals with hypertension are unaware of their condition. The prevalence of hypertension is highest in African countries (27%), followed by Southeast Asia (25%), while the Americas have the lowest prevalence (18%) (World Health Organization, 2023).

The initial target for controlling hypertension is a blood pressure of 140/90 mmHg, with a long-term target of 130/80 mmHg (Arguedas, Leiva, and Wright, 2020). These targets are generally apply to adults with hypertension, although specific goals may vary based on individual patient characteristics and risk factors. Medication therapy, lifestyle modifications, and complementary therapies are crucial pillars in managing hypertension (Oparil, 2019). Lifestyle modifications include weight reduction, reduced sodium intake, increased physical activity, limiting alcohol consumption, and adherence to a structured diet guided by the Dietary Approaches to Stop Hypertension (DASH), and emotional stress management (Miezah & Hayman, 2024).

Numerous studies have demonstrated the impact of lifestyle changes on blood pressure. For instance, a study conducted in Iran involving 8,244 participants aged 25 to 70 years found that lifestyle changes—including nutrition, physical activity, and smoking cessation —play a significant role in reducing blood pressure (Akbarpour et al., 2019). Blood pressure

control among hypertensive patients who adopted these lifestyle modifications was significantly better after one year compared to those who did not. In the group combining medication with lifestyle modifications, 59.3% achieved controlled blood pressure, compared to 25.2% in the group relying solely on antihypertensive medication ($P < 0.001$). Additionally, the group implementing both medication and lifestyle changes experienced a 39.5% improvement in therapy adherence (Xiao et al., 2020).

Emotional and psychological conditions are critical factors influencing the management of hypertension, as they play a key role in regulating neurohormonal responses that impact physiological processes. Compared to other factors, these neurohormonal responses have a more immediate effect on blood pressure control. During treatment, many patients experience significant psychological and emotional stress as they navigate their illness (Chamsi-Pasha & Chamsi-Pasha, 2021). Several studies have demonstrated that hypertensive patients often suffer from high levels of psychological distress. For example, research involving 252 hypertensive respondents revealed that 86 individuals (33.7%) had elevated psychological distress scores (Eghbali et al., 2022). Additionally, a qualitative study in Korea involving 13 hypertensive patients highlighted common psychological challenges, such as denial of their condition and fear of lifelong treatment (Kang & Jeong, 2020).

Research on emotional resilience in hypertensive patients has been conducted; however, the interventions employed address only specific aspects of patients' resilience. Some models focus exclusively on physical interventions, others on psychological interventions, while some incorporate Islamic practices such as dhikr and prayer. Several emotional resilience models have been developed by experts, including the Endurance Exercise Enhances Emotional Valence (EEEEV) model, which is specifically tailored for athletes. Introduced by Grace E. Giles, this model involves running either 9 or 30 miles per week. Research examining the impact of the EEEEV model on emotional regulation in 36 runner participants found that athletes demonstrated strong emotional resilience both during and after their training sessions (Giles et al., 2018). Another approach is Emotional Schema Therapy (EST), which emphasizes emotional regulation and the exploration of emotional experiences under the guidance of a therapist. In Iran, a study applied this therapy model over 10 sessions during the treatment of individuals with psychological disorders such as social phobia, anxiety, and obsessive-compulsive tendencies. The results indicated significant improvements in the participants' psychological state and memory function (Hokmabadi et al., 2019).

Existing Islamic emotional resilience models tend to be either singular or integrative, which limits their ability to provide a comprehensive impact. The Islamic emotional resilience model integrates physical, spiritual, and social elements based on local cultural values to offer a more holistic coping mechanism for managing emotional stress and reducing blood pressure.

The Islamic Emotional Resilience Model comprises five main components: controlling stimuli, Islamic physical adaptation, Islamic spiritual adaptation, Islamic social adaptation, and positive emotion management. This model was developed through qualitative research involving 10 hypertensive outpatients and is enriched by theories derived from Islamic teachings and recent studies. Its novelty of this model lies in integrating Islamic principles with contemporary psychological practices, offering a holistic approach that addresses not only physical but also spiritual and social dimensions of well-being. Unlike existing interventions, this model emphasizes the unique cultural and spiritual context of patients, providing a tailored approach that enhances emotional resilience and stress management. In addition to its integrative advantages, this emotional resilience model is designed to be simple and universally applicable to individuals from diverse backgrounds. Various studies on Islamic practices have provided substantial evidence of their positive impact on health. For example, research by Tasyakuranti et al. (2022) involving eight respondents demonstrated the effects of dhikr on anxiety levels, evaluated using Electroencephalogram (EEG). Dhikr using Asmaul Husna has also been shown to reduce anxiety levels in adults (Agustina et al., 2020). A study on the effects of ablution (wudu) and dhikr confirmed their influence on controlling emotional stress (Reza, 2020).

The Islamic emotional Emotional Resilience Intervention Model provides a more comprehensive approach to emotional resilience by integrating physical, psychological, spiritual, and social aspects. This model supports a holistic management strategy tailored to the needs of hypertensive patients, helping them regulate their emotions effectively. What sets the Islamic Resilience Model apart from existing interventions is unique incorporation of spiritual elements alongside physical, psychological, spiritual, and social aspects, offering a more culturally sensitive and multidimensional framework. This integration not only meets patients' diverse needs, but also helps maintain a better quality of life through a comprehensive approach.

METHOD

Study design

This study was a randomized controlled trial (RCT) using a single-blind design, in which the researcher was aware of group assignments. The objective was to evaluate the effect of the Islamic Emotional Resilience Model on patients with primary hypertension.

Population & Sample

The study involved 100 patients diagnosed with primary hypertension who were undergoing outpatient treatment at a hospital in Kudus, Central Java, Indonesia. Respondents were selected through randomization and equally divided into two groups: 50 in the intervention group and 50 in the control group. The sample size was determined using the formula for paired samples, based on the significant difference reported in the study by Tsai (2014), with an additional 10% estimated for potential dropouts. The formula used is as follows:

$$N1 = N2 = \frac{(Z\alpha + Z\beta).\ S}{X1\text{-}x2}^{\ 2}$$

Figure 1. Formula Paired Sample

Inclusion criteria included the following

1. Diagnosed with primary hypertension.
2. Muslim and willing to participate.
3. Had not previously emotional resilience in an Islamic context.
4. Underwent standard hypertension therapy.
5. Agreed to follow the intervention under the researchers' supervision
6. Did not suffer from conditions such as shortness of breath, heart failure, or hepatic cirrhosis.

The exclusion criteria in this study included:

1. Patients diagnosed with heart diseases (such as acute myocardial infarction and heart failure) and chronic

illnesses including diabetes mellitus, chronic obstructive pulmonary disease (COPD), kidney failure, and stroke — based on medical history recorded in the patient's chart and screening using a checklist of related symptoms.
2. Patients experiencing shortness of breath.
3. Patients who refused to continue the intervention.

Participants who were unable to complete the intervention were replaced with other eligible subjects. A homogeneity test was conducted to ensure baseline equivalence between the groups.

Intervention

The intervention group received the Islamic Emotional Resilience Model intervention for three weeks. The implementation of the Islamic Emotional Resilience Model was carried out over three weeks, focusing on strengthening emotional, spiritual, physical, social, and self-control aspects based on Islamic values. The first week emphasized controlling emotional stimuli through identification and education to manage negative emotions positively. The second week focused on strengthening spirituality through additional worship and religious social activities. The third week highlighted adaptive physical behavior, including exercise preceded by prayer, and social behavior, such as family activities, maintaining good relationships with neighbors, and participation in jamiyyah gatherings. All activities were complemented by Islamic emotional control practices, including tafakkur (self-reflection), reciting prayers to restrain anger, and muhasabah (self-evaluation).

The intervention was directly supervised by the researcher and supported by family members who had been briefed beforehand. Both groups continued to receive standard antihypertensive therapy throughout the study.

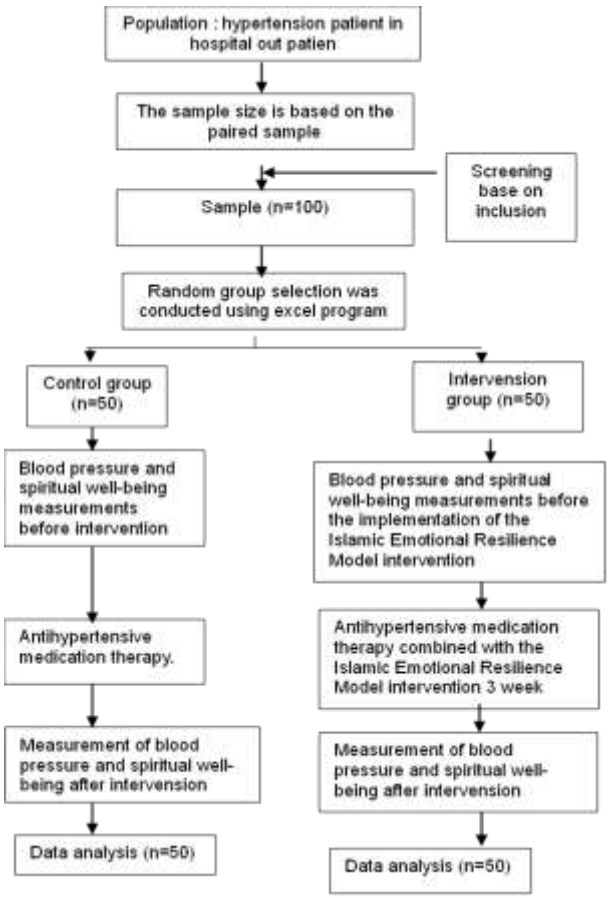

Figure 2. Research Process Flowchart

Data collection

Blood pressure was measured using an aneroid sphygmomanometer. Data on spiritual well-being were collected using the Spiritual Well-Being Scale (SWBS) developed by Barbara Schmidt from California State University, Sacramento. The instrument, created in 1982, has been widely used in over 300 studies, 200 theses and dissertations, and 35 professional presentations (Paloutzian et al., 2021). One study using SWBS was conducted by Yaghoobzadeh et al (2018) on the relationship between spiritual well-being and hope in patients with cardiovascular disease. The questionnaire consists of 20 items rated on a 4-point Likert scale, with total scores ranging from 20 to 80. It measures two dimensions: religious well-being (items 1, 3, 5, 7, 9, 13, 15, 17, 19) and existential well-being, reflecting one's relationship with God and sense of life purpose.

Data analysis

Data were analyzed using t-tests to evaluate differences between pre- and post-intervention measurements in both groups. The data were tested for normality, and some variables were found to be non-normally distributed. However, the researcher applied the Central Limit Theorem (CLT) principle, which states that when the sample size is sufficiently large (typically ≥ 30), the sampling distribution of the mean approximates normality. The results of the normality test are presented in the table below.

Table 1. Results of Data Normality Test

Group	Mean	Skewness	Kurtosis	*p*
Sistolic				
Intervension	160,50	0,895	-0,072	0,000
Control	156,08	1,096	2,118	0,000
Dyastolic				
Intervension	98,00	0,059	-0,638	0,000
Control	97,00	0,275	-0,570	0,000
Spiritual Well-being				
Intervension	64,92	-0,101	-0,126	0,200
Control	62,92	-0,057	-0,065	0,200

Ethical considerations

This study prioritized humanistic principles and ensured that no harm came to the participants. Ethical approval was obtained from the Ethics Committee of the Faculty of Nursing, University of Indonesia (No. KET-062/UN2.F12. D1.2.1/PPM.00.02/2023). Informed consent was obtained from all participants and their families.

RESULT

The characteristics of the respondents are described as follows

Table 2. Characteristics of Respondents

Variable	Intervention	Control	Total (%)
Gender			
Male	15 (30%)	13 (26%)	28 (28%)
Female	35 (70%)	37 (74%)	72 (72%)
Smoking Status			
Non-smoker	43 (86%)	47 (94%)	90 (90%)
Smoker	7 (14%)	3 (6%)	10 (10%)
Family History of Hypertension			
None	14 (28%)	14 (28%)	28 (28%)
Present	36 (72%)	36 (72%)	72 (72%)
Obesity Status			
Normal weight	12 (24%)	11 (22%)	23 (23%)
Overweight	30 (60%)	29 (58%)	59 (59%)
Obese	8 (16%)	10 (20%)	18 (18%)

Variable	Intervention	Control	Total (%)
Type of Medication Used			
ACE Inhibitor	25 (50%)	16 (32%)	41 (41%)
CCB (Calcium Channel Blocker)	21 (42%)	31 (62%)	52 (52%)
Combination	4 (8%)	3 (6%)	7 (7%)
Religious Activities			
Yasinan (Qur'an recitation group)	8 (16%)	10 (20%)	18 (18%)
Pengajian (religious study group)	33 (66%)	32 (64%)	65 (65%)
None	9 (18%)	8 (16%)	17 (17%)

Based on Table 2, the majority of hypertension cases occur in women with a family history of hypertension. Most respondents in the intervention group use Angiotensin Converting Enzyme (ACE) ACE inhibitor medications (lisinopril and captopril), while the control group predominantly consumes calcium channel blockers (CCB) medications (amlodipine). The most commonly attended religious activity in both groups is religious study gatherings. Analysis of respondent characteristics using the chi-square test revealed no significant differences between the intervention and control groups, indicating homogeneity ($p > 0.05$).

Table 3. Analysis of the Mean Differences in Blood Pressure Among Hypertensive Patients Before and After the Intervention with the Islamic Emotional Resilience Model in the Intervention and Control Groups.

Group	Mean	SD	p	CI 95%
Intervention				
Systolic				
Pre-test	160.50	19.066	0.001	6.772 – 23.828
Post-test	145.20	19.508		
Difference	15.30	30.007		
Diastolic				
Pre-test	98.00	7.559	0.000	6.643 – 10.157
Post-test	89.60	7.814		
Difference	8.40	6.181		
Spiritual Well-Being				
Pre-test	64.92	5.979	0.000	-3.966 – -1.754
Post-test	67.78	5.199		
Difference	2.86	3.891		
Control				
Systolic				
Pre-test	156.08	15.569	0.001	4.251 – 15.509
Post-test	146.20	14.270		
Difference	9.88	19.808		
Diastolic				
Pre-test	97.00	6.145	0.000	6.746 – 5.754
Post-test	92.00	6.999		
Difference	5.00	6.145		
Spiritual Well-Being				
Pre-test	62.92	8.116	0.939	-1.012 – 1.092
Post-test	62.88	7.652		
Difference	0.04	3.703		
Difference Between Intervention & Control				
Systolic (p)		0.770		
Diastolic (p)		0.109		
Spiritual Well-Being (p)		0.000		

Refer to Table 3., the data show that in the intervention group, the Islamic emotional resilience model had a significant effect on systolic blood pressure ($p < 0.001$), diastolic blood pressure ($p < 0.001$), and spiritual well-being ($p < 0.01$). In the control group, there was also a significant difference between pre-test and post-test blood pressure values (systolic $p < 0.001$; diastolic $p < 0.001$), whereas spiritual well-being showed no significant change ($p= 0.939$). A comparative t-test between the intervention and control groups also showed no significant difference in systolic ($p = 0.770$) or diastolic blood pressure ($p = 0.109$), while spiritual well-being differed significantly between the groups ($p < 0.001$).

DISCUSSION

The study results indicate that the Islamic Emotional Resilience Model significantly affects on blood pressure (both systolic and diastolic) as well as spiritual well-being. Although there was no statistically significant difference in systolic or diastolic blood pressure between the intervention and control groups, spiritual well-being differed significantly. However, the reduction in blood pressure was greater in the intervention group than in the control group. These findings suggest that combining antihypertensive medication with a holistic emotional stress management approach yields better outcomes in hypertension management than medication alone.

These findings are supported by the stress and adaptation theory developed by Lazarus and Folkman (1984), which explains that individuals who effectively manage stress tend to exhibit more stable physiological responses. In this context, the Islamic Emotional Resilience Model serves as a spirituality-based coping mechanism that helps individuals cope with psychological pressure (Cooper & Quick, 2017). This model not only manages stress at the cognitive level but also incorporates practical training in emotional stress management.

A study by Samsualam & Masriadi (2022) highlights that Islamic practices, such as dhikr, prayer, and spiritual reflection enhance emotional calmness and reduce physiological stress responses. Lower stress levels directly contribute to reductions in blood pressure by decreasing sympathetic nervous system activity and stress hormones like cortisol. This mechanism supports the findingsin the intervention group, which exhibited a more significant reduction in blood pressure compared to the control group. Although control group also experienced a statistically significant decrease blood pressure, , it was less pronounced than that observed in the intervention group. In their study, the intervention group, which received dhikr and prayer guidance, showed a significant reduction in systolic blood pressure, with a mean decrease from 147.50 mmHg to 142.25 mmHg ($p = 0.000$), and diastolic blood pressure from 88.33 mmHg to 83.92 mmHg ($p = 0.001$). This quantitative evidence strengthens the argument that Islamic practices can effectively complement hypertension management.

This aligns with research by Chen et al. (2024), which involved 715 pre-hypertensive patients. Most interventions lasted eight weeks, with one lasting six weeks. Pooled effect

sizes indicated significant reductions in systolic blood pressure (MD = -9.12, 95% CI [-12.18, -6.05], p < 0.001), diastolic blood pressure (MD = -5.66, 95% CI [-8.88, -2.43], p < 0.001), anxiety (SMD = -4.10, 95% CI [-6.49, -1.71], p < 0.001), depression (SMD = -1.70, 95% CI [-2.95, -0.44], p < 0.001), and perceived stress (SMD = -5.91, 95% CI [-8.74, -3.09], p < 0.001) after the intervention. Subgroup analysis results supported the effectiveness of mindfulness-based interventions in reducing blood pressure regardless of gender or baseline blood pressure levels, with greater benefits observed in participants with higher baseline blood pressure. Compared to current research, emotional resilience offers several advantages. In addition to being holistic—encompassing physical, psychological, spiritual, and social aspects—it also produces significant effects on blood pressure in a shorter period (three weeks versus six weeks). Management approaches that rely solely on cognitive strategies without incorporating physical activity may not effectively enhance cardiac muscle contraction strength and blood circulation (Pinckard, Baskin, and Stanford, 2019). Furthermore, the social aspects integrated into the Islamic Emotional Resilience Model can strengthen patient support systems, thereby improving hypertension management (Pan et al., 2021).

A cross-sectional study examined the relationship between religiosity (including religious attendance, private prayer, and religious coping) and spirituality (theistic, non-theistic, and total) with health behavior components among African Americans. Results from multivariable logistic regression analysis of 2,967 respondents (mean age [SD] = 54.0 [12.3] years; 65.7% female) indicated that higher religious attendance was associated with an increased likelihood of achieving ideal levels of physical activity, diet, smoking habits, blood pressure, and physical activity scores (Brewer et al., 2022). Meta-analyses studies also confirm the effectiveness of spiritual and religious-based interventions in patients with cardiovascular diseases. These interventions have been shown to reduce heart rate, anxiety, and depression, while improving spiritual well-being and hope (Sert et al., 2025).

The Health Belief Model (HBM) is a foundational framework in health behavior research. Developed in the 1950s by social psychologists at the United States Public Health Service (USPHS), it emphasizes six primary cognitive dimensions that influence behavior: perceived susceptibility (belief in the risk of developing a condition), perceived severity (understanding the seriousness of a condition), perceived benefits (belief in the effectiveness of proposed actions), perceived barriers (obstacles to taking action), self-efficacy (confidence in one's ability to act), and cues to action (triggers that prompt behavioral change). These dimensions underline the importance of belief—including religious belief—in motivating individuals to undertake critical health-related actions, such as those required by hypertensive patients (Alyafei & Easton-Carr, 2024). The Health Belief Model (HBM) serves as a valuable foundation for developing the Islamic Emotional Resilience Model aimed at improving health conditions. This Model emphasizes an individual's capacity to manage hypertension through various strategies, such as exercise, positive responses to stimuli, and enhanced social support. Additionally, it incorporates physical, spiritual, and social training approaches to modify behaviors that hinder effective hypertension management.

The clinical implications of this study suggest that spirituality-based approaches, particularly the Islamic Emotional Resilience Model, can play integral role in hypertension management programs. This model is highly suitable as a complementary therapy alongside antihypertensive medication. It can be implemented for outpatients, enabling them to be trained and independently apply the techniques at home to manage the emotional stress experienced by hypertensive patients across various stress levels. Given its significant effectiveness in reducing systolic blood pressure, the model can serve as an additional intervention in healthcare services, especially within communities with predominantly Muslim populations. This approach not only positively impacts physiological aspects but also enhances overall psychological well-being.

In addition to its religious limitations—being specifically designed for Muslims—this study also encountered challenges related to respondent compliance. This issue became apparent during the research, as three respondents discontinued participation due to urgent circumstances, such as the onset of other illnesses or having a sick family member. Although these respondents were replaced with new participants, this situation highlights a potential challenge regarding compliance when implementing the intervention in healthcare clinics.

CONCLUSION AND RECOMMENDATION

The study demonstrates a significant effect of the Islamic Emotional Resilience Model intervention on blood pressure and the spiritual well-being of hypertensive patients (p < 0.001). These findings suggest that this model could be effectively applied to both outpatient and inpatient settings as a complementary therapy alongside antihypertensive medication, particularly in managing emotional stress that can influences blood pressure and emotional health.

Islamic emotional resilience serves as a crucial role in supporting the management of hypertension as a complementary therapy. When combined with therapies addressing multiple dimensions of human well-being—such as spiritual, physical, psychological, and social therapies—hypertension management provides a greater impact on reducing blood pressure than medication alone. Islamic emotional resilience can be further developed and integrated into clinical practice to improve better outcomes for hypertensive patients. However, current research is primarily limited to Muslim populations, highlighting the need to develop models or interventions that are inclusive of diverse religious backgrounds.

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