

Efficacy Of Surah Al-Rahman In Management Of Hypertension

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Abstract

Hypertension is a major public health issue worldwide, often linked to severe cardiovascular complications. While medication remains the primary treatment, interest in alternative, low-cost interventions such as spiritual therapies is increasing. This pretest–posttest experimental study examined the efficacy of listening to Surah Al-Rahman in managing blood pressure among individuals with primary hypertension. The study included 15 participants (N = 15) diagnosed with hypertension for six months or more. Using purposive sampling, participants meeting strict criteria were recruited from the Institute of Applied Psychology, University of the Punjab, Lahore, and were randomly assigned to experimental and control groups. Sociodemographic variables were matched, and those not meeting criteria were excluded. Baseline interviews and blood pressure readings were recorded. Over four weeks, participants attended laboratory sessions where blood pressure was measured before each session. Three groups were formed: the experimental group listened to Surah Al-Rahman, the active control group listened to music, and the passive control group received no intervention. Clinical and demographic data were collected, and participants were briefed according to APA ethical guidelines. Findings revealed that those listening to Surah Al-Rahman showed significant reductions in post-intervention blood pressure compared to baseline (systolic BP: M = 123.49, SD = 7.24; diastolic BP: M = 77.64, SD = 2.96). Results were confirmed using the Wilcoxon Signed-Rank Test. The study highlights the potential of Quranic recitation (Surah Al-Rahman) as a minimally invasive, cost-effective intervention for hypertension management.

Keywords: Surah Al-Rahman, hypertension, non-pharmacological intervention, experiment

1. Introduction

This study investigated whether the Quranic verse of Surah Al-Rahman could help reduce elevated blood pressure (BP) levels. Prophet Muhammad (PBUH) had stated, "...The adornment

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of the Quran is Surah Al-Rahman". Surah Al-Rahman was the most poetic chapter due to its rhythm and repetition of words. Surah Al-Rahman was used in this experimental study. The Quran states that it contains "shifa" for the followers, and this was seen through the objective biomarker of hypertension. This study aimed to assess the effectiveness of a cost-free and non-invasive therapeutic intervention in reducing BP levels. Elevated BP is a significant health concern that was becoming increasingly prevalent. It was well known that music therapy alleviated depression and anxiety and improved psychological health and well-being. If listening to music could be beneficial, then the effect of listening to religious scripture was also assessed. It was hypothesized that patients with hypertension in the first level of the experimental group who listened to Surah Al-Rahman would have reduced levels of BP compared to the second experimental group who listened to music and the control group receiving no intervention. Furthermore, the amount of reduction in BP in patients with hypertension in level 1 of the treatment group after assessment was greater as compared to level 2 of the experimental group and the control group. A purposive sample of 15 patients with hypertension was recruited, from which 5 were randomly assigned to level 1 (n=5), level 2 (n=5), or the control group (n=5). Participants in the two intervention groups had their BP checked and recorded before and after the listening intervention using a digital BP monitoring machine. Twenty structured group sessions of 20 minutes once a day were conducted for 4 weeks with both levels of the experimental groups (Surah Al-Rahman and music group). Level 1 of the experimental group listened to Surah Al-Rahman recited by Qari Abdul Basit. Level 2 listened to relaxing music, and the control group received no intervention; they were asked to simply record their BP levels once and then again for the second time after 20 minutes. The Wilcoxon signed rank test was used to identify differences within the group between the pre-assessment and post-assessment scores. The findings of this study offered significant insights into the potential health benefits of listening to Quranic verses, providing a cost-effective and non-invasive method for managing hypertension. Hypertension, or high BP, indicates that the force of blood in the blood vessels is higher than it normally should be. BP is measured with the "mm Hg" unit, which stands for millimeters of mercury. Readings are always given in pairs, consisting of systolic (upper) and diastolic (lower) BP. BP levels may be normal, below normal, or above normal. Hypertension is when the force of blood against the arteries is consistently too high. This condition is highly prevalent, costly, and debilitating. Hypertension is defined as an individual 18 years of age or older with a systolic pressure reading of greater than 120mmHg or more or a diastolic reading of 81 mmHg or more, or those taking antihypertensive medications (American College of Cardiology, 2017).

Hypertension is a chronic condition which is also called the silent killer since prolonged elevated levels can damage the heart and arteries, leading to stroke, vision problems, heart failure, memory issues, and kidney damage. Many times, no noticeable symptoms are causing significant damage to the body. If hypertension is undetected, it can go untreated, causing organ damage and even organ failure. Although sounding straightforward, many complex hypertension issues can only be looked after by experts and specialists in their 3 respected fields. Numerous diagnostic tests exist, such as cardiac and genetic testing (Stanford Health Care, n.d.). Hypertension has

several stages based on BP levels, which may vary between societies and organizations. According to the American College of Cardiology (2017), elevated BP is defined as a systolic pressure between 120 and 129 mm Hg and a diastolic pressure less than 80 mm Hg. Stage 1 hypertension consists of a systolic reading of 130 to 139 mm Hg and a diastolic reading of 80 to 89 mm Hg. Stage 2 hypertension is identified by a systolic pressure of 140 mm Hg or higher and a diastolic pressure of 90 mm Hg or higher. A hypertensive crisis occurs when the systolic BP level is over 180 mm Hg and/or diastolic is over 120 mm Hg. At this stage, patients need immediate changes in medication and/or immediate hospitalization. European BP guidelines are more flexible than American guidelines. The European guidelines state that optimal BP is below 120/80 mm Hg; normal BP is 120-129 mm Hg systolic and 80-84 mm Hg diastolic; and “high normal” is 130-139 mm Hg systolic and 85-89 mm Hg diastolic (Tanne, 2004). Hypertension can be of several types. Primary hypertension, secondary hypertension, resistant hypertension, malignant hypertension, isolated systolic hypertension, white-coat hypertension, and preeclampsia. Hypertension is one of the most common cause of cardiovascular disease worldwide. Currently, an estimated 1 billion people have hypertension globally, and this is expected to increase by 2025 to reach 1.56 billion people.

Surah Al-Rahman, the 55th chapter of the Quran, consists of 78 verses revealed in Medina and is titled after Allah’s attribute “Al-Rahman,” meaning the Most Merciful. Rich in rhetorical devices such as repetition, metaphors, and contrasts, the Surah emphasizes Allah’s sovereignty, unity, mercy, and wisdom, reminding believers of the countless blessings surrounding them and the importance of gratitude, morality, and accountability in the afterlife. Natural elements like the sun, moon, and water are repeatedly mentioned, while paradise and hell are vividly described to highlight monotheism as a central pillar of Islam (Rafique et al., 2017). Known for its soothing effect, the Surah inspires gratitude, reflection, and self-awareness, offering hope, comfort, and reassurance while fostering spiritual growth. Its poetic language and repetitive refrains also make memorization easier compared to other chapters (Bibi et al., 2020).

Hypertension and antihypertensive medications can lead to adverse effects. One such effect is disturbance of electrolyte levels, resulting in hypokalemia (low potassium). This condition can often be prevented by using appropriate medications to maintain potassium balance. Hyponatremia occurs when sodium levels are too low. Older adults, individuals with low BMI, and women are more likely to develop hyponatremia, and risk increases with antidepressants or NSAIDs. To reduce risk, antihypertensive medications should be initiated at low doses, and water intake kept moderate. Excessive water intake should not occur, and medication may need to be changed if hyponatremia is diagnosed. Edema is also common in hypertensive patients. Salt sensitivity can lead to chronic kidney disease, heart failure, and venous insufficiency.

Music therapy has been shown to improve and restore health, practiced either receptively through listening or actively through creative activities such as writing lyrics and composing music (Rafique et al., 2017), and it alleviates mood issues like depression and anxiety by activating brain structures including the hippocampus and amygdala (Raglio et al., 2015), making it a valuable tool for mental well-being; meanwhile, BP management remains critical since hypertension, the

greatest risk factor for cardiovascular disease, has no cure but can be controlled through reduced sodium intake, healthier diets, and physical activity, with trials confirming benefits in lowering stroke, heart failure, and coronary heart disease (MacGregor & He, 2005; NIH, 2016); uncontrolled hypertension, often worsened by excessive salt from fast food, can lead to headaches, kidney disease, obesity, and other complications (Cook, 2008; HeartWest Team, 2024), while elevated BP damages kidney filtration and may result in chronic kidney disease requiring dialysis (High Blood Pressure and Kidney Disease, 2025); moreover, hypertension and diabetes mellitus are closely linked within metabolic syndrome, sharing risk factors such as oxidative stress, inflammation, and immune activation, with hypertension being twice as common in diabetic patients, and this coexistence significantly increases the risk of cardiovascular disease and other life-threatening outcomes (Nazarzadeh et al., 2021).

Theoretic Framework

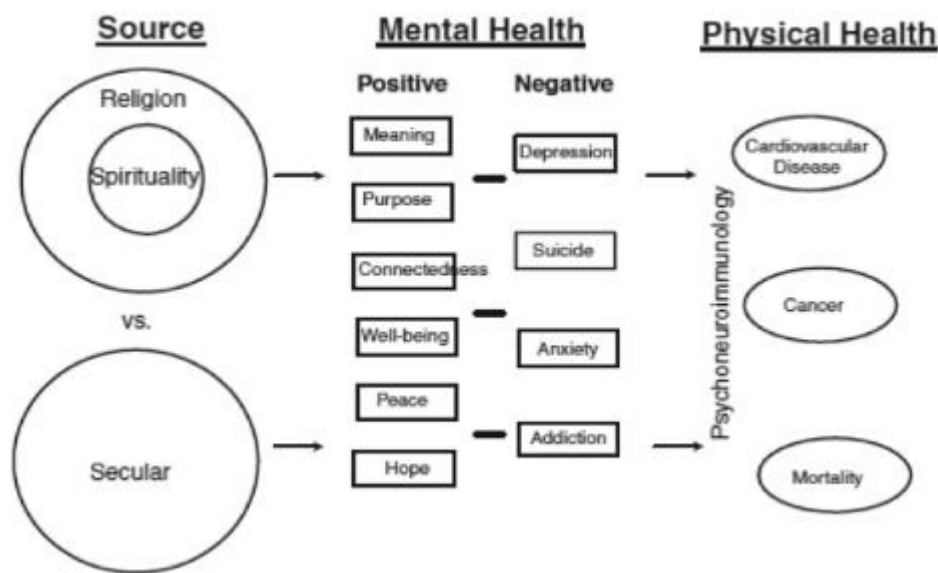


Figure 1: Classic Model of Religion, Spirituality, and Health

Classic Model of Religion, Spirituality, and Health Koenig (2008) describes the "classical model" explaining the relationships among religiousness, spirituality, and health outcomes. In this model, spirituality is the core of religiosity and mental health acts as the mediator, essentially serving as a bridge between religion and its effect on physical health. Religiousness and spirituality both enhance positive outcomes of meaning, connectedness, and well-being while reducing negative psychological states like depression, anxiety, suicidality, and addictions. These psychological improvements influence psychoneuroimmunological (PNI) factors, leading to lower levels of cardiovascular disease, cancer, and mortality. The classic model emphasizes that the effects of religiosity on health are mediated through psychological health, which then impacts PNI factors and overall health outcomes (Aldwin et al., 2013). After seeking permission from the author, the model has been given below.

Applying this classic model on the efficacy of Surah Al-Rahman in managing hypertension can be seen as an intervention that enhances spirituality and religiousness. This increase in spiritual and religious engagement may reduce stress, anxiety, and depression among participants. This can lead to improved psychological health. Improved psychological health could then positively influence PNI factors, potentially resulting in lower BP levels and reduced hypertension. By integrating spiritual practices such as listening to Surah Al-Rahman, this study attempts to align with the classical model's proposition that spiritual and religious engagement can lead to better health outcomes through its impact on mental well-being and physiological responses. Additionally, listening to the recitation could act similarly to music therapy, which is known to alleviate psychological stress, resulting in improved cardiovascular reactivity and lower levels of hypertension.

3. Literature Review

An experimental study was done to assess the efficacy of Surah Al-Rahman on stress, anxiety, and depression among undergraduate medical students. Eighty students, both men and women with mild to moderate levels were randomly divided into the experimental or control groups. The experimental group listened to the recitation of Surah Rahman with its translation, while the control group practiced relaxation techniques. Sessions lasted 30 minutes and were held regularly and then every other day. The Perceived Stress Scale and the Depression Anxiety Stress Scale-21 were administered before and after the intervention to measure levels of stress, anxiety, and depression. After two months, both groups were reassessed, and results showed that the experimental group experienced a greater reduction in anxiety, depression, and stress scores as compared to the control group, suggesting that Surah Al-Rahman could serve as an effective, non-pharmacological approach to managing such psychological conditions (Waheed et al., 2020).

A single-group experimental study was conducted to assess the distress through autonomic dysregulation in which the nervous system does not work properly. Majeed et al., (2021) provided evidence as to the physical manifestations of distress. The researchers explored the role of Surah Al-Rahman on the physiological responses of diabetic patients. From April 2018 to February 2019, the study enrolled 10 people who listened to the recitation. Patients with HbA1c of more than 5.7 and a Diabetic Distress Scale score of more than three were included. In addition to recording BP, blood glucose, cortisol levels pre and post, electrocardiogram and electroencephalogram, the patients were assessed for various outcomes in both periods. Results reported less systolic BP, more alpha power (creativity and originality), and enhanced heartbeat evoked potentials, indicating less stress and more heart-brain coherence afterward. It can be inferred that listening to Surah Al-Rahman may help decrease diabetic distress and regulate the autonomic nervous system.

A quasi-experimental study was done to investigate whether listening to Surah Al-Rahman will affect pain levels, oxygen saturation, and vital signs. The population was patients having undergone coronary artery bypass graft (CABG) surgery. A pre-and post-test design was used with 60 patients from two hospitals between July and September of 2018. Convenience sampling was

used to select adult Muslim patients who had undergone CABG surgery. Results found significant reductions in pain, improvements in oxygen levels, slower breathing rates, and lower diastolic BP. Heart rate and systolic BP remained largely unchanged, demonstrating the potential therapeutic benefits of listening to the Quran (Imran et al., 2021).

Numerous treatments have been developed and implemented to address the widespread mental disorder of depression. Recently, spiritual practices have emerged as complementary therapies to traditional medicine and psychotherapy. Research has 36 demonstrated the benefits of spiritual interventions in mental health (Koenig, 2012). Rafique et al., (2017) conducted an experimental study to see the efficacy of Surah Al-Rahman in managing depression among Muslim women. A pretest-posttest experimental research design was used on twelve women participants aged 15-30 who were recruited using a purposive sampling strategy. Through random assignment, 6 participants were put in the treatment group and 6 were put in the music control group. This study found significant reductions in depression symptoms, as measured by the Beck Depression Inventory, in Muslim women who listened to audio recordings of Surah Al-Rahman. In light of the literature review, it can be concluded that most research has highlighted the positive effect of religiosity on health.

4. Methodology

This study aimed to evaluate the effectiveness of listening to the recitation of Surah Al-Rahman in reducing BP among individuals with primary hypertension. While findings may not be generalizable to all religious backgrounds, they may offer clinical benefits for Muslim patients.

A pretest–posttest quasi-experimental research design was employed to establish a cause-and-effect relationship between the intervention and BP outcomes. Participants were randomly assigned to one of three groups: Surah Al-Rahman recitation, relaxation music, or control with no intervention. BP was measured before and after each session across multiple days. The design combined between-subjects comparisons of group differences with within-subjects repeated measures to assess changes over time.

The sample included fifteen participants (N = 15) being recruited using purposive, convenience, and snowball sampling. All were Muslim individuals formally diagnosed with primary hypertension for six months or more, currently on prescribed medication, and presenting elevated BP ($\geq 130/90$ mmHg). Participants were randomly divided into three groups: Surah Al-Rahman (n = 5), relaxation music (n = 5), and control (n = 5). Exclusion criteria included pregnancy, secondary hypertension, chronic kidney disease, respiratory or neurological disorders, changes in medication during the study, or reported psychological issues. All the Ethical Considerations by the APA were duly followed. A Descriptive analysis was conducted to examine data distribution across demographic and clinical factors. To assess changes within each group from pre- to post- 50 intervention, the Wilcoxon Signed-Rank Test was applied. This is the non-parametric alternative to the paired samples t-test. This test helped determine whether there are significant shifts in BP within the Surah Al-Rahman group, the relaxing music group (active control), and the no intervention control group (passive control). To evaluate differences between

these groups at the post-intervention stage, the Kruskal-Wallis test was used which is the non-parametric alternative of ANOVA. Wherever significant group differences emerged, Dunn's post hoc test with Bonferroni correction was conducted to identify specific pairwise differences among the three groups.

5. Results

This study explored the efficacy of listening to Surah Al-Rahman in managing BP among individuals with primary hypertension. Fifteen participants ($N = 15$) were randomly selected and allocated to three groups: the experimental group, which listened to Surah Al-Rahman; the active control group, which listened to music; and the passive control group, which received no intervention. BP was measured before and after the intervention for the experimental and active control groups to compare pre- and post-intervention scores. The Wilcoxon Signed Rank Test, a non-parametric alternative to the paired samples t-test, was used to analyze within-group differences, with results presented in Tables 5.1-5.7. To assess between-group differences, pre- and post-intervention BP levels were compared using the Kruskal-Wallis H Test, a non-parametric alternative to ANOVA. Findings from the Kruskal-Wallis H Test and post hoc pairwise comparisons, highlighting changes in systolic and diastolic BP across groups, are detailed below.

Table 5.1

Wilcoxon Signed-Rank Test Results for Systolic Blood Pressure Across Intervention Groups ($N = 15$)

Group	Mean (Pre)	Mean (Post)	Z	p
Surah Al-Rahman (Treatment) (n = 5)	127.72	123.49	-2.02	.04*
Relaxing Music (Active Control) (n = 5)	132.20	129.28	-2.02	.04*
No Intervention (Passive Control) (n = 5)	140.27	140.22	-1.00	.32

Note. Mean values represent systolic BP scores at pre- and post-assessment. Z = standardized test statistic. $p < .05$, $p < .01$, $p < .001$.

A Wilcoxon Signed-Rank test was conducted to examine whether there was a significant difference in systolic BP before and after the interventions across the three groups. The results revealed a statistically significant reduction in systolic BP following exposure to Surah Al-Rahman in the treatment group ($z = -2.02$, $p = .04$), suggesting that listening to Surah Al-Rahman had a calming physiological effect, as all participants showed lowered systolic BP at the post-intervention level. Similarly, a statistically significant reduction in systolic BP observed in the active control group following the relaxing music intervention ($z = -2.02$, $p = .04$), indicating that relaxing music also produced a calming physiological response. In contrast, the passive control group, which received no intervention, did not show a statistically significant difference between pre- and post-assessment systolic BP levels ($z = -1.00$, $p = .32$), suggesting that in the absence of any intervention, participants' systolic BP remained largely unchanged.

Table 5.2

Wilcoxon Signed-Rank Test Results for Pre- and Post-Intervention Diastolic Blood Pressure Across Intervention Groups (N = 15)

Group	Mean (Pre)	Mean (Post)	Z	p
Surah Al-Rahman (Treatment) (n = 5)	86.98	77.37	-2.02	.04*
Relaxing Music (Active Control) (n = 5)	85.55	82.36	-2.02	.04*
No Intervention (Passive Control) (n = 5)	85.47	84.93	-1.00	.32

Note. Mean values represent diastolic BP scores at pre- and post-assessment. Z = standardized test statistic. $p < .05$, $p < .01$, $p < .001$.

A Wilcoxon Signed-Rank test was conducted to determine whether there was a statistically significant difference in diastolic BP before and after the interventions across the three groups. The results revealed a significant reduction in diastolic BP following exposure to Surah Al-Rahman in the treatment group ($z = -2.02$, $p = .04$). The ranks indicated that there were no positive ranks ($n = 0$), while all participants showed negative ranks ($n = 5$), demonstrating that post-test diastolic BP was lower than pre-test levels. Similarly, the active control group exposed to relaxing music showed a statistically significant reduction in diastolic BP following the intervention ($z = -2.02$, $p = .04$), suggesting that listening to music produced a calming physiological effect, as all participants exhibited lower diastolic BP at post-intervention. In contrast, the passive control group, which received no intervention, did not show a statistically significant difference between pre- and post-assessment diastolic BP levels ($z = -1.00$, $p = .32$), indicating that in the absence of intervention, participants' diastolic BP remained largely unchanged.

Table 5.3

Kruskal–Wallis H Test Results Comparing Pre-Intervention Systolic and Diastolic Blood Pressure Across Experimental, Active Control, and Passive Control Groups (N = 15)

Variable	H (df)	p
Pre-Intervention Systolic BP	2.65 (2)	.266
Pre-Intervention Diastolic BP	4.56 (2)	.102

Note. H = Kruskal–Wallis test statistic; df = degrees of freedom. $p < .05$, $p < .01$, $p < .001$.

A Kruskal–Wallis H test was conducted to determine whether there were any differences in average systolic and diastolic BP before the intervention across the Experimental (Surah Al-Rahman), Music Active Control, and Passive Control groups. The results indicated that there was no statistically significant difference in pre-intervention systolic BP across the three groups, $H(2) = 2.65$, $p = .266$, suggesting that the null hypothesis could not be rejected. Similarly, no statistically significant difference was observed in pre-intervention diastolic BP among the groups, $H(2) = 4.56$, $p = .102$. These findings suggest that participants in all three groups had comparable average systolic and diastolic BP levels prior to the intervention.

Table 5.4

Kruskal–Wallis H Test Results Comparing Post-Intervention Systolic and Diastolic Blood Pressure Across Experimental, Active Control, and Passive Control Groups (N = 15)

Variable	Group	n	Mean Rank (MR)	H (df)	p
Post-Intervention Systolic BP	Surah Al-Rahman (Treatment)	5	4.80	6.26 (2)	.044*
	Active Control (Music)	5	7.40		
	Passive Control (No Intervention)	5	11.80		
Post-Intervention Diastolic BP	Surah Al-Rahman (Treatment)	5	4.10	5.99 (2)	.05*
	Active Control (Music)	5	9.20		
	Passive Control (No Intervention)	5	10.70		

Note. MR = mean rank; H = Kruskal–Wallis H statistic; df = degrees of freedom. $p < .05$, $p < .01$, $p < .001$.

The Kruskal–Wallis H test was conducted to compare post-intervention systolic and diastolic BP across the three groups: the Surah Al-Rahman treatment group, the active control music group, and the passive no-intervention control group. The test examined whether there was a statistically significant difference in BP levels among the groups. The results indicated a statistically significant difference in post-intervention systolic BP across the three groups, $H(2) = 6.26$, $p = .044$. The mean ranks for systolic BP were lowest for the Surah Al-Rahman treatment group (MR = 4.80), followed by the active control group (MR = 7.40), and highest for the passive control group (MR = 11.80), suggesting a stronger BP–lowering effect for the Surah Al-Rahman intervention. Similarly, the results revealed a statistically significant difference in post-intervention diastolic BP among the groups, $H(2) = 5.99$, $p = .050$. The mean ranks for diastolic BP were lowest in the Surah Al-Rahman group (MR = 4.10), followed by the active control group (MR = 9.20) and the passive control group (MR = 10.70). These findings suggest that the type of intervention had a significant effect on post-intervention BP, with the Surah Al-Rahman group showing the lowest systolic and diastolic BP levels, indicating a potentially greater calming or relaxing effect compared to the other conditions.

Table 5.5

Pairwise Comparisons of Intervention Groups for Post-Intervention Systolic and Diastolic Blood Pressure Following Kruskal–Wallis H Tests (N = 15)

Outcome	Group Comparison	Test Statistic	p	Adjusted p
Systolic BP	Surah Al-Rahman vs Music Control	−0.919	.358	1.000
	Surah Al-Rahman vs Passive Control	−2.475	.013	.040*
	Music Control vs Passive Control	−1.556	.120	.359
Diastolic BP	Surah Al-Rahman vs Music Control	−1.876	.061	.182
	Surah Al-Rahman vs Passive Control	−2.477	.013	.040*
	Music Control vs Passive Control	−0.602	.547	1.000

Note. p = unadjusted p-value; adjusted p = p-value corrected for multiple comparisons using Bonferroni adjustment. $p < .05$, $p < .01$, $p < .001$.

A Kruskal–Wallis H test was conducted to compare the effect of the three intervention types on post-intervention systolic and diastolic BP. The results indicated a statistically significant difference between groups for post-intervention systolic BP, $H(2) = 6.26$, $p = .044$. Post hoc pairwise comparisons using Dunn’s test with Bonferroni adjustment revealed that the Experimental group (Surah Al-Rahman) differed significantly from the Passive Control group (adjusted $p = .040$), suggesting that listening to Surah Al-Rahman had a measurable impact on systolic BP when compared to receiving no intervention. No other group differences were statistically significant. Similarly, a statistically significant difference was observed for post-intervention diastolic BP, $H(2) = 6.66$, $p = .035$. Post hoc pairwise comparisons indicated that the Experimental group differed significantly from the Passive Control group (adjusted $p = .040$), suggesting that listening to Surah Al-Rahman also had a measurable impact on diastolic BP compared to no intervention, while no other pairwise differences were significant.

Table 5.6

Kruskal–Wallis H Test Results for Systolic and Diastolic Blood Pressure Change Across Intervention Groups (N = 15)

Outcome Variable	Test Statistic (H)	df	Asymptotic Sig. (2-sided)
Systolic BP	9.591	2	.008**
Diastolic BP	12.727	2	.002**

Note. $p < .05$, $p < .01$, $p < .001$. Kruskal–Wallis H tests indicated statistically significant differences in both systolic blood pressure change, $H(2) = 9.59$, $p = .008$, and diastolic blood pressure change, $H(2) = 12.73$, $p = .002$, across intervention groups.

There was a statistically significant difference in systolic BP change between at least two of the intervention groups ($H = 9.591$, $p = .008$). Similarly, there was a statistically significant difference in diastolic BP change between at least two of the intervention groups ($H = 12.727$, $p = .002$).

Table 5.7

Pairwise Comparisons of Systolic and Diastolic Blood Pressure Change Between Intervention Groups Following Kruskal–Wallis H Tests (N = 15)

Outcome Variable	Group Comparison	Test Statistic	Std. Error	Std. Test Statistic	Adj. Sig.
Systolic BP	Passive control vs. Music active control	7.200	2.803	2.569	.031
	Passive control vs. Surah Al-Rahman group	7.800	2.803	2.783	.016*
	Music active control vs. Surah Al-Rahman group	.600	2.803	.214	1.000
Diastolic BP	Passive control vs. Music active control	5.000	2.803	1.784	.223
	Passive control vs. Surah Al-Rahman group	10.000	2.803	3.568	.001**
	Music active control vs. Surah Al-Rahman group	5.000	2.803	1.784	.223

Note. p = unadjusted p value; adjusted p = p value corrected for multiple comparisons using the Bonferroni adjustment. $p < .05$, $p < .01$, $p < .001$.

Post hoc pairwise comparisons revealed that the Surah Al-Rahman group showed significantly different systolic BP changes compared to the passive control group ($p = .016$ after Bonferroni adjustment). Other pairwise differences for systolic BP were not statistically significant. For diastolic BP, the Surah Al-Rahman group showed significantly different changes compared to the passive control group ($p = .001$ after adjustment), while other pairwise differences were not statistically significant.

6. Discussion

This study examined the efficacy of listening to Surah Al-Rahman as a nonpharmacological intervention for managing BP in individuals with primary hypertension. It represents a forward-trending approach integrating spirituality into cognitive therapeutic techniques to influence physical biomarkers. Fifteen participants ($N = 15$) were randomly assigned to one of three groups: the experimental group, which listened to Surah Al-Rahman; the active control group, which listened to relaxing music; and the passive control group, which received no intervention. BP was measured before and after the intervention to assess both within-group and between-group changes.

There were a total of 15 participants ($N=15$) and non-parametric statistical analyses were employed. The Wilcoxon Signed-Rank Test assessed within-group differences, while the Kruskal-Wallis H Test compared post-intervention differences between the groups. Out of the six hypotheses proposed, five were supported by the results. Significant reductions in BP were observed in both the Surah Al-Rahman and relaxing music experimental groups in terms of pre- to post-assessment change. Additionally, the control group showed no significant change in BP levels as hypothesized.

However, the sixth hypothesis predicting that the Surah Al-Rahman group would show a significantly greater reduction in BP compared to the relaxing music group, was not supported. This finding was different from what was hypothesized. Although it was hypothesized that Quranic recitation would produce a more pronounced reduction in BP due to its spiritual significance and emotional depth, the results showed no statistically significant difference between the Surah Al-Rahman and relaxing music groups. This suggests that both interventions were similarly effective in reducing physiological stress markers. One possible explanation is that both auditory stimuli may engage similar relaxation pathways, such as reducing sympathetic nervous system activity and inducing a state of calm. Additionally, the influence of random assignment cannot be overlooked; participants with higher baseline BP may have been placed in the relaxing music group, potentially minimizing between-group differences. These findings are also consistent with previous research (e.g., Gavgani et al., 2015), which reported comparable outcomes for spiritual and musical interventions.

To examine whether the three groups differed significantly in terms of BP, Kruskal-Wallis H tests were conducted. No statistically significant difference was found between the two

experimental groups in terms of BP reduction. This suggests that both interventions may be similarly effective in promoting relaxation and physiological regulation. Also, a significant reduction in post treatment level of hypertension in the control group was not found as hypothesized.

To ensure baseline comparability, a Kruskal-Wallis H test was conducted on preintervention measures. No significant differences were found among the three groups in systolic BP $H(2) = 4.560$, $p = .102$, or diastolic BP $H(2) = 2.650$, $p = .266$. These results confirmed that the initial baseline BP of all groups was similar prior to the interventions. This finding suggests that listening to Surah Al-Rahman produced the most substantial reduction which aligns with earlier research showing that both Quranic recitation and relaxing music can positively influence physiological outcomes (Rafique et al., 2017; Kow et al., 2018; Tang et al., 2018; Zhang, 2023). The observed calming effects of Surah Al-Rahman can be attributed to the rhythmic and melodic properties of Quranic recitation. Quranic recitation has been shown to promote relaxation, reduce sympathetic nervous system activity, and enhance parasympathetic activation (Moulaei et al., 2023). Similarly, relaxing music reduces physiological arousal through emotional regulation mechanisms (Chee et al., 2024). The comparable reductions observed in both intervention groups suggest that spiritual and secular auditory interventions may effectively reduce stress and improve physiological parameters. These results underscore the practical applicability of non-invasive, low-cost, and easily accessible interventions for managing hypertension. Hypertension is highly prevalent and can be a debilitating condition. Surah Al-Rahman, in particular, is beneficial for individuals seeking spiritually grounded therapeutic options (Rafique et al., 2017; Nurlela et al., 2024; Waheed et al., 2020).

6.1 Implications

- The cognitive spiritual intervention used can be seen as an alternative or adjunct intervention for managing hypertension, especially for those who are resistant to conventional treatments like medication or those who prefer a more holistic approach. Patients who are religious can greatly benefit from a religious therapy intervention which is noninvasive. Since Surah Al-Rahman was found to be effective in reducing blood pressure, it may be possible to reduce the dosage or frequency of antihypertensive medications, which could lead to cost savings and fewer side effects.
- Surah Al-Rahman can be integrated into patient management plans for hypertension leading to reduced stress and anxiety. Mental health could be improved enhancing well-being.
- By incorporating Surah Al-Rahman into one's daily routine, patients may feel in control of their hypertension management, leading to improved self-efficacy and adherence to treatment plans.
- This study can help reduce the gap between the religion and scientific domains. Intersection between science and spirituality can promote cultural and religious sensitivity in healthcare, which is much needed among the Muslim population. Considering the fact that

many religious people oppose scientific knowledge and vaccinations due to a lack of knowledge and awareness, this research can demonstrate compatibility of faith and science. This study can ultimately contribute to improved health outcomes and quality of life among religious individuals and communities.

- Future studies can adopt stricter, standardized protocols to investigate the therapeutic potential of Quranic recitations. Researchers can play Surah Al-Rahman or other Quranic verses to assess effectiveness and compare the level of effectiveness between different verses and durations etc. Additionally, individual differences, such as age, gender, and spiritual beliefs, can be examined to understand how they influence the effectiveness of Quranic recitations in managing hypertension. By employing randomized controlled trials and using a range of physiological and psychological measures, future studies can provide valuable insights into the benefits of Quranic recitations for other non-communicable diseases as well.
- This study has broad public health implications since the high prevalence of hypertension is a global health concern. This study's approach could be adapted and tested in diverse populations, and successful replication of findings in other settings could make this intervention part of a worldwide health plan.

6.2 Strengths

- This study involved practical therapy sessions with strong real-world applicability. Although conducted in a lab setting, the audio-based cognitive behavioral intervention demonstrated high mundane realism, since it can be easily implemented in everyday environments. Individuals can listen and gain benefits in their bedroom, living room, or office/ workplace. An audio intervention provides a non-invasive, low-effort, and cost-free technique accessible to most individuals capable of sitting and listening for up to 20 minutes. The spiritual cognitive therapy approach used can be widely adopted. Furthermore, the effectiveness of cognitive behavioral therapy has been well established in prior research, and the present study's experimental group outcomes are consistent with findings reported by Rafique et al. (2017), reinforcing the utility of CBT-based methods. Potential threats to internal validity, such as selection bias, testing effects, and maturation, were minimized through careful study design and standardized data collection procedures.

6.3 Limitations

- Measurement variability was present, although a session plan with the session start and end time was created before the start of the study. Throughout the sessions, participants often arrived early or later than the scheduled time. Some participants provided their measurements from outside the lab due to their inability to come to the lab where the experiment was being conducted. This flexibility was allowed since it was not logistically possible to start and end intervention sessions on the dates and times planned. Participants were accommodated accordingly. Since different 82 participants listened to Surah Al-

Rahman or music at different times and locations, this may have introduced variability in the measured pulse and blood pressure values. Blood pressure and pulse measurements can be influenced by various factors such as the time of day, recent activity, and stress level. Even with a structured protocol, variability was present, which could have influenced the data. Furthermore, although participants were given instructions regarding exercise and food intake before sessions, it cannot be assured that all participants adhered to these instructions, potentially adding variability to the measurements. Food intake influences blood pressure readings, which cannot be controlled.

- There may have been bias in measurement. This is because this study involves regular blood pressure and pulse measurements, which could have been affected by environmental factors, including the time of day when sessions took place. Also, participants could have been in different psychological states, such as stress during particular sessions, which could impact blood pressure readings. Additionally, the absence of blinding could have introduced performance or detection bias since the participants or researchers could have been influenced by expectations of the intervention's effects.
- Although random assignment was used to allocate participants to groups, this method does not guarantee perfectly balanced baseline characteristics. It is possible that some participants with higher baseline blood pressure were assigned to the control group instead of the Surah Al-Rahman or music intervention group (active control group), which may have influenced the observed outcomes.

7. Conclusion

The results of this study demonstrated that cognitive behavioral therapy given through an audio-guided format was effective in reducing physiological markers of BP. Listening to Surah Al-Rahman was a non-invasive and easily accessible intervention providing participants with a moment to relax and reflect. The consistent reductions observed in the experimental group suggest that the psychological effect of the audio sessions had a physical effect, which could be seen through the reduction in BP. Listening to the Quran contributed to improved autonomic regulation and cardiovascular response. Participants benefited from a simple yet impactful approach that required minimal effort and no cost, making it highly feasible for use in academic, clinical, or home settings. Although some limitations were present, the current study enhances our understanding of how spiritual and cognitive-behavioral techniques can influence physiological well-being. Future research is encouraged to build upon these findings by exploring long-term outcomes and application across broader populations.

8. References

- Aldwin, C. M., Park, C. L., Jeong, Y., & Nath, R. (2013). Differing pathways between religiousness, spirituality, and health: A self-regulation perspective. *Psychology of Religion and Spirituality*, 6(1), 9–21. <https://doi.org/10.1037/a0034416>
- American College of Cardiology. (2017, November 8). New ACC/AHA high blood pressure guidelines lower definition of hypertension. <https://www.acc.org/latest-in-cardiology/articles/2017/11/08/11/47/mon-5pm-bp-guideline-aha-2017>
- Bibi, S., & Fatima, U. (2020). A study to find the efficacy of Surah Rahman on stress among women suffering from paralysis: A quasi-experimental study. *International Journal of Research in Social Sciences*, 10(11), 13–23. https://www.ijmra.us/project%20doc/2020/IJRSS_NOVEMBER2020/IJRSS2Nov20-20097.pdf
- Chee, Z. J., Chang, C. Y., Cheong, J. Y., Malek, F. H., Hussain, S., De Vries, M., & Bellato, A. (2024). The effects of music and auditory stimulation on autonomic arousal, cognition and attention: A systematic review. *International Journal of Psychophysiology*, 199, 112328. <https://doi.org/10.1016/j.ijpsycho.2024.112328>
- Cook, N. R. (2008). Salt intake, blood pressure, and clinical outcomes. *Current Opinion in Internal Medicine*, 7(4), 362–366. <https://doi.org/10.1097/mci.0b013e32830c6d41>
- Gavgani, V. Z., Ghोजazadeh, M., Sadeghi-Ghyassi, F., & Khodapanah, T. (2020). Effects of Quran recitation on the reduction of preoperative anxiety in elective surgery: A systematic review and meta-analysis of randomized controlled trials. *Research Square*. <https://doi.org/10.21203/rs.3.rs-48044/v2>
- HeartWest Team. (2024, July 25). What are signs of too much salt: Avoid high sodium intake. <https://www.heartwest.com.au/high-sodium-levels-warning/>
- High blood pressure and kidney disease. (2025). National Institute of Diabetes and Digestive and Kidney Diseases. <https://www.niddk.nih.gov/health-information/kidney-disease/high-blood-pressure>
- Imran, M., Gul, R. B., & Batool, S. (2021). Effects of Surah Al-Rahman on pain, oxygen saturation, and vital signs in post-CABG patients: A pilot study. *Journal of Shifa Tameer-e-Millat University*, 4(1), 32–38. <https://doi.org/10.32593/jstmu/vol4.iss1.129>
- Koenig, H. G. (2008). Concerns about measuring “spirituality” in research. *The Journal of Nervous and Mental Disease*, 196(5), 349–355. <https://doi.org/10.1097/nmd.0b013e31816ff796>
- Koenig, H. G. (2012). Religion, spirituality, and health: The research and clinical implications. *ISRN Psychiatry*, 2012, 1–33. <https://doi.org/10.5402/2012/278730>
- Kow, F. P., Adlina, B., Sivasangari, S., Punithavathi, N., Ng, K. K., Ang, A. H., & Ong, L. M. (2018). The impact of music guided deep breathing exercise on blood pressure control: A participant-blinded randomized controlled study. *The Medical Journal of Malaysia*, 73(4), 233–238.
- MacGregor, G. A., & He, F. J. (2005). Importance of controlling blood pressure. *Climacteric*,

- 8(sup3), 13–18. <https://doi.org/10.1080/13697130500330325>
- Majeed, U., Aftab, M. F., Baloch, D. M., Ahmed, S., Yusuf, I. M., Hasan, M. A., & Qureshi, M. S. (2021). Modulation of heart and brain function by Surah Al-Rahman recitation among distressed diabetic patients in Pakistan. *Journal of Religion and Health, 61*(5), 3852–3865. <https://doi.org/10.1007/s10943-021-01431-2>
- Moulaei, K., Haghdoost, A., Bahaadinbeigy, K., & Dinari, F. (2023). The effect of the holy Quran recitation and listening on anxiety, stress, and depression: A scoping review. *Health Science Reports, 6*(12). <https://doi.org/10.1002/hsr2.1751>
- National Institutes of Health. (2016). Blood pressure matters: Keep hypertension in check. <https://newsinhealth.nih.gov/2016/01/blood-pressure-matters>
- Nazarzadeh, M., Bidel, Z., Canoy, D., Copland, E., Wamil, M., Majert, J., Byrne, K., Sundstrom, J., Teo, K., Davis, B., Chalmers, J., Pepine, C., Dehghan, A., Bennett, D., Smith, G., & Rahimi, K. (2021). Blood pressure lowering and risk of new-onset type 2 diabetes: An individual participant data meta-analysis. *The Lancet, 398*(10313). [https://doi.org/10.1016/S0140-6736\(21\)01920-6](https://doi.org/10.1016/S0140-6736(21)01920-6)
- Nurlela, L., Asih, F., Pindi, K., & Syamsuriati, S. (2024). Al-Quran recitation therapy with Surah Ar-Rahman on students' sleep quality: A randomized controlled trial. *Diversity: Disease Preventive of Research Integrity, 4*(2), 63–69. <https://doi.org/10.24252/diversity.v4i2.45901>
- Rafique, R., Anjum, A., & Raheem, S. S. (2017). Efficacy of Surah Al-Rahman in managing depression in Muslim women. *Journal of Religion and Health, 58*(2), 516–526. <https://doi.org/10.1007/s10943-017-0492-z>
- Raglio, A., Attardo, L., Gontero, G., Rollino, S., Groppo, E., & Granieri, E. (2015). Effects of music and music therapy on mood in neurological patients. *World Journal of Psychiatry, 5*(1), 68. <https://doi.org/10.5498/wjp.v5.i1.68>
- Stanford Health Care. (n.d.). High blood pressure (hypertension). <https://stanfordhealthcare.org/medical-conditions/blood-heart-circulation/high-blood-pressure.html>
- Tang, H., Harms, V., & Vezeau, T. (2008). An audio relaxation tool for blood pressure reduction in older adults. *Geriatric Nursing, 29*(6), 392–401. <https://doi.org/10.1016/j.gerinurse.2008.02.003>
- Tanne, J. H. (2004). European guidelines on hypertension more flexible than those in United States. *BMJ, 328*(7451), 1279.4. <https://doi.org/10.1136/bmj.328.7451.1279-c>
- Waheed, Z., Ahmad, W., Butt, H., Tahir, F., Khwaja, S. A., & Piracha, M. H. (2020). Impact of Surah Rahman on the management of stress, anxiety, and depression. *Psychology and Education, 57*(8), 1386–1390.
- Zhang, A., Park, S., Sullivan, J., & Jing, S. (2018). The effectiveness of problem-solving therapy for primary care patients' depressive and/or anxiety disorders: A systematic review and meta-analysis. *The Journal of the American Board of Family Medicine, 31*(1), 139–150. <https://doi.org/10.3122/jabfm.2018.01.170270>

