Effect of Listening to Quran Recitation on the Quality of Life of Systemic Lupus Erythematosus Patients: A Quasi-Experimental Study

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ABSTRACT

***Background**: Quality of life (QoL) is not sufficiently considered in current systemic lupus erythematosus (SLE) treatment targets, even though it's significantly impaired. Studies have shown that higher religiousness is associated with a higher QoL. This study aimed to determine the effect of listening to Quran recitations on the QoL of SLE patients. **Methods**: A quasi-experimental study with a pretest-posttest study design was conducted at Cipto Mangunkusumo Hospital, Jakarta. Participants were females aged 18 years or older with SLE, Muslim, and not experiencing hearing loss. Those who didn't regularly listen to the Quran were assigned to the control group. The intervention group consisted of patients who had previously listened to the Quran on a more regular basis, as well as those who had not. The intervention group listened to a Quran (QS. Ar-Rahman) for a minimum duration of 15 minutes, twice daily, for 40 days. A comparison of the effects of listening to the Quran within the group was conducted using a paired T-test, with a Wilcoxon test applied when necessary. p-values of less than 0.05 were considered statistically significant. **Results**: A total of 65 participants were included in the study, with 32 in the intervention group and 33 in the control group. The results indicated a significant increase in QoL in the intervention group (p=0.023). Additionally, there was a reduction in anxiety levels within the intervention group (p=0.030). **Conclusion**: Listening to Quran recitation can enhance QoL, while also decreasing anxiety in patients with SLE.*

***Keywords**: Quran, recitation, systemic lupus erythematosus, quality of life*

INTRODUCTION

*S*ystemic lupus erythematosus (SLE), a chronic, multisystem autoimmune disease with a relapsing-remitting course, predominantly affects women of childbearing age, with a marked female predominance.[1] The global prevalence of SLE is estimated at 43.7 (15.87–108.92) per 100,000 persons, affecting approximately 3.41 million individuals worldwide.[2] SLE imposes a substantial economic burden, with annual healthcare costs surpassing those of other chronic conditions such as fibromyalgia and rheumatoid arthritis.[3]

Despite advancements in diagnostic strategies and therapeutic approaches, disease activity, comorbidities, and medication-induced toxicities contribute to progressive organ damage and poor long-term outcomes.[4] While current treatment targets emphasize remission and low disease activity, health-related quality of life (QoL) remains underprioritized, despite being significantly impaired in SLE patients.[5,6] Even in remission, patients frequently report persistent symptoms, including fatigue, sleep disturbances, and sexual dysfunction, which adversely impact the QoL.[4,5]

The World Health Organization (WHO) defines QoL as an individual's perception of their position in life within the framework of cultural and societal values, personal goals, and expectations.[7] Several studies have demonstrated that greater spirituality and religious engagement are associated with improved QoL.[8–18] Among Muslim patients, listening to Quran recitations is a common spiritual practice. A previous study has shown that Quran recitation modulates brain activity, enhancing alpha and theta wave oscillations, which are linked to relaxation and meditation.[19] Listening to Surah Ar-Rahman has been found to reduce cortisol levels, decrease stress markers, and lower inflammatory mediators.[20,21] Surah Ar-Rahman, a Makiyah surah consisting of 78 verses, is the most rhythmic surah of the Quran and has a meaning about Allah's mercy and love for His servants, which teaches human beings to always be grateful. Additionally, it has been reported to alleviate anxiety in patients undergoing cardiac catheterization, surgery, and hemodialysis, and in populations such as athletes, pregnant women, and cancer patients.[22–24] Beyond anxiety reduction, listening to Quran recitations has also been shown to decrease depression, alleviate cancer-related pain, and enhance mental health and QoL.[24–30] However, to date, no studies have evaluated the effect of listening to Quran recitations on the QoL of SLE patients. Therefore, this study aimed to assess the effects of intervention through listening to Quran recitations on the QoL of SLE patients.

METHODS

Study Design and Setting

A clinical trial of a quasi-experimental study with pre-test and post-test design was conducted at the outpatient clinic of the Department of Internal Medicine in Cipto Mangunkusumo General Hospital, Jakarta, Indonesia, in 2024. This study was registered at ClinicalTrials.gov (identifier: NCT06263764) on February 16, 2024. It adhered to the International Conference on Harmonization Guidelines for Good Clinical Practice, the Declaration of Helsinki, and applicable local regulations.[31]

This study included women diagnosed with SLE according to the European League Against Rheumatism/American College of Rheumatology 2019 criteria, aged 18 years or older, Muslim, and without hearing impairment. Patients were excluded if they received a steroid dose exceeding 20 mg per day (equivalent to prednisone), were taking psychopharmaceuticals, were unable to read or write, or were pregnant. Patients were considered to have dropped out of the study if they withdrew from the study, were hospitalized, had an increased steroid dose beyond 20 mg/day, or became pregnant during the study.

Consecutive sampling was employed in this study. The required sample size was calculated using the formula for a paired numerical analytical study. Assuming a two-sided type I error rate (α) of 5%, a type II error rate (β) of 10% (90% power), a standard deviation of 10, an effect size of 10, and accounting for a 20% loss due to follow-up or noncompliance, a total of 56 patients was required, with 28 patients per group.

Study Groups and Interventions

Patients were assigned to the intervention or control group based on their previous habits of listening to Quran recitations. Patients who listened to Quran recitations once a week or less (irregular listening habits) were allocated to the control group, while those who listened more than once a week (regular listening habits), as well as those with irregular habits, were included in the intervention group. This approach was taken to observe the effect of the intervention across varying patterns of prior Quran exposure, rather than limiting it to regular listeners only. Furthermore, it was considered unethical to allocate patients with a history of regular Quran listening to the control group during the study.

Patients in the intervention group were instructed to listen to a recitation of Surah Ar-Rahman for 15 minutes, twice daily, over 40 days using an MP3 player containing a standardized recording by Freed Ghalib. The duration of the daily intervention was adapted from a previous study that assessed the efficacy of Surah Ar-Rahman in managing depression.[25] As no prior studies had examined the impact of Quran recitation on the QoL in patients with SLE, a 40-day observation period was selected to allow sufficient time for potential changes in QoL to emerge. This duration exceeded that used in the previous study, which was 30 days, based on the assumption that improvements in QoL may require a longer intervention period.[25] The timing of each listening session was left flexible, depending on participant availability. No specific instructions were provided regarding accompanying activities, and the recitation could be listened to either while performing other tasks or in a focused, undistracted setting. Daily reminders were provided via phone calls or direct messages to enhance adherence, and compliance was documented by patients using daily recording forms. In contrast, the control group was instructed to maintain their usual Quran listening or reading routines throughout the study period. Quran reading habits were documented. Both groups continued to receive standard SLE treatment during the study period.

Data Collection and Measurements

All participants provided written informed consent. Before and after the intervention, we assessed the quality of life, SLE disease activity, and levels of anxiety and depression in both groups. The Lupus Quality of Life (LupusQoL) questionnaire was used to evaluate patients' quality of life. The SLE disease activity was assessed using the MEX-SLEDAI. Anxiety and depression levels were evaluated with the Hospital Anxiety and Depression Scale (HADS) questionnaire.

We also recorded the baseline characteristics of the patients, including age, previous habits of listening to Quran recitations, education level, marital status, income level, comorbidities, and SLE manifestations (based on the classification in Table 1). These data were obtained through patient interviews. Additionally, we documented treatment modifications (such as changes in the type and dose of immunosuppressants and changes in steroid dosage), hospitalization history, and the participation of any individuals who became pregnant during the study period by reviewing medical records and conducting participant interviews.

Study Outcomes

Study outcomes assessed in this study were QoL, disease activity, and psychological status. QoL was measured using the Lupus Quality of Life (LupusQoL) questionnaire. The LupusQoL is a 34-item SLE-specific instrument that assesses eight domains: physical health, pain, planning, intimate relationships, burden to others, emotional health, body image, and fatigue.[32] Each item uses a 5-point Likert scale (0–4), with domain scores are calculated by averaging item responses within each domain, dividing by four, and multiplying by 100 to yield scores ranging from 0 (worst) to 100 (best QoL). The questionnaire, originally developed and validated by McElhone et al., was completed by patients with assistance from unblinded research staff. The Indonesian version used in this study had been previously translated and validated for local use.[32,33]

Disease activity was measured using MEX-SLEDAI, a simplified version of the original SLEDAI that excludes immunologic tests, to

enhance feasibility in clinical practice. Higher scores reflect increased disease activity, with cut-offs as follows: <2 (remission or inactive), 2–5 (mild), 6–9 (moderate), 10–13 (severe), and ≥14 (very severe).[34,35]

The levels of anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS).[36] The HADS includes two subscales—HADS-A (anxiety) and HADS-D (depression). Each subscale comprises seven items rated on a 4-point scale (0–3), with higher scores indicating more severe symptoms. The Indonesian version, which has been validated in SLE populations, was used in this study.[37,38]

Statistical Analysis

Descriptive data were presented as frequencies and percentages. The Kolmogorov–Smirnov test was applied to assess the normality of data distribution. For normally distributed variables, means and standard deviations (SD) were reported; otherwise, data were expressed as medians with minimum and maximum values. Categorical variables were analyzed using the Chi-square test or Fisher's exact test, as appropriate. For numerical comparisons between groups, the independent t-test was used for normally distributed data, while the Mann–Whitney U test was applied for non-normal distributions. Within-group comparisons of QoL scores before and after the intervention were performed using the paired t-test or Wilcoxon signed-rank test, depending on data distribution. McNemar's test was employed to assess the impact of listening to the Quran on SLE disease activity, anxiety, and depression in the intervention and control groups. A p-value of <0.05 was considered statistically significant. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 27 (IBM, Armonk, NY, USA).

Ethical Approval

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of the Faculty of Medicine, Universitas Indonesia (KET-1780/UN2.F1/ETIK/PPM. 00.02/2023). All patients provided written informed consent before study enrolment.

RESULTS

Patient characteristics

A total of 69 patients were initially screened for participation. At baseline, their prior engagement with Quran recitations was assessed. Among them, 52 patients listened to Quran recitations less than once per week, whereas 17 patients regularly engaged in Quran recitation (once per week or more). Based on these habits, patients were allocated to either the intervention or control group. The control group comprised 35 patients with irregular Quran listening habits, whereas the intervention group included 34 patients, consisting of 17 individuals who had regularly listened to Quran recitations before the study and 17 who had not. At baseline, the median duration of Quran listening among regular listeners was 8.57 minutes per day (range: 2.29–25.71 minutes/day). During the study period, two patients in the intervention group were hospitalized—one due to a herpes infection and the other due to severe fatigue—and were subsequently withdrawn from the study. In the control group, two patients were excluded following the discovery of pregnancy. Consequently, data from 32 patients in the intervention group and 33 patients in the control group were included in the final analysis. Consequently, the final analysis included 32 patients in the intervention group and 33 in the control group, as presented in **Figure 1**.

The majority of patients had a mean age of 31 years and were highly educated (66.2%). More than half were married (58.5%), and nearly half (47.3%) were classified as economically disadvantaged. The vast majority of patients had a low burden of comorbidities (98.5%) and exhibited musculoskeletal (87.7%) and mucocutaneous (83.1%) manifestations of SLE. Disease activity was predominantly mild (86.2%), and a significant proportion reported no anxiety (75.4%) or depression (90.8%). The mean QoL score before intervention was 77.91±13.95. Baseline characteristics were comparable between the intervention and control groups, including Lupus QoL scores before the intervention (p>0.25). The only significant difference observed was in prior Quran recitation habits, with p<0.001 (**Table 1**).

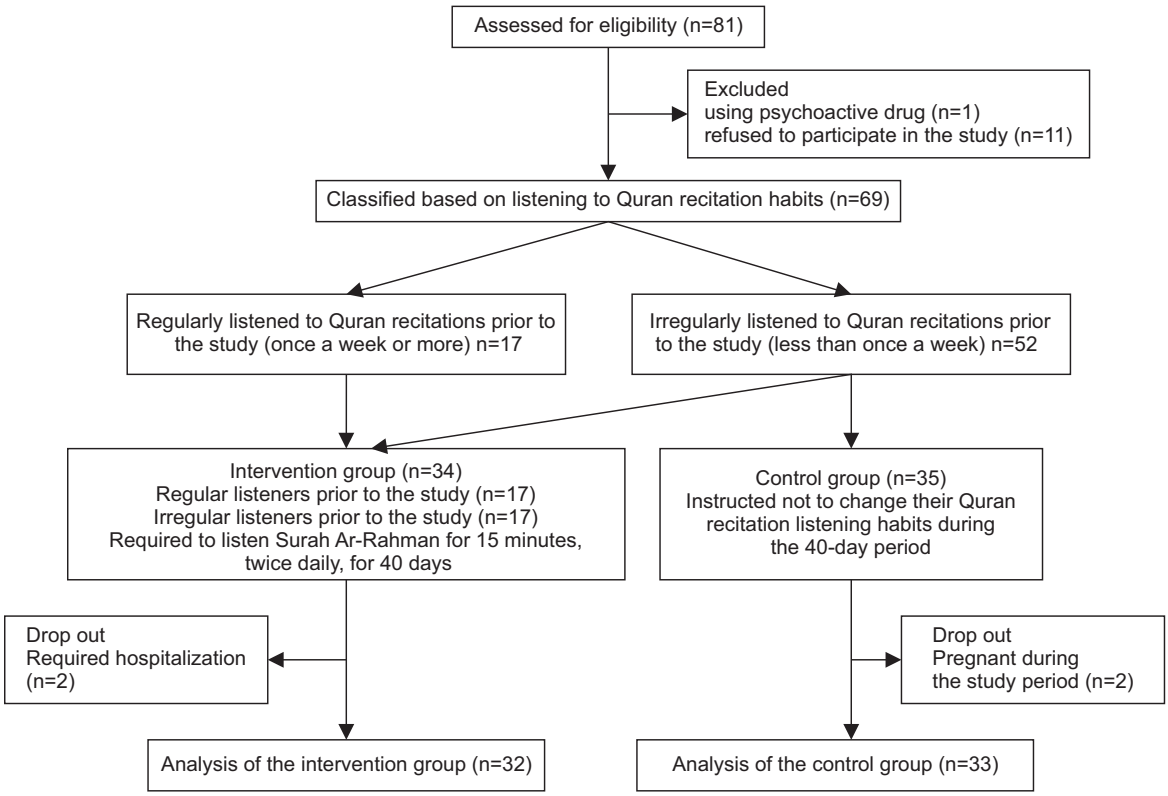

Figure 1. Study flowchart showing the patient recruitment and follow-ups.

Table 1. Characteristics of the SLE patients

Characteristics	Total (n=65) n (%)	Control group (n=33) n (%)	Intervention group (n=32) n (%)	*p*-value
Age (years), median (min-max)	31 (19-59)	31 (19–57)	32 (20–59)	0.738[a]
Previous habit of listening to Quran recitations				<0.001[b]
Regular (once a week or more)	17 (26.20)	0 (0)	17 (53.10)	
Irregular (less than once a week)	48 (73.80)	33 (100)	15 (46.90)	
Previous habit of reading the Quran				0.320[b]
Regular (once a week or more)	45 (68.20)	21 (63.60)	24 (75)	
Irregular (less than once a week)	20 (30 3)	12 (36.40)	8 (25)	
Education level, n (%)				
Elementary-Junior high school	0 (0)	0 (0)	0 (0)	0.929[b]
Senior high school	21 (32.30)	11 (33.30)	10 (31.30)	
University	43 (66.20)	22 (66.70)	21 (65.60)	
No formal education	1 (1.50)	0 (0)	1 (3.10)	
Marital status, n (%)				
Married	38 (58.50)	19 (57.60)	19 (59.40)	
Single	24 (36.90)	13 (39.40)	11 (34.40)	0.883[b]
Divorced	2 (3.10)	0 (0)	2 (6.30)	
Widowed	1 (1.50)	1 (3.0)	0 (0)	
Income level, n (%)*				
Poor (>IDR354,000)	31 (47.70)	16 (48.50)	15 (46.90)	
Vulnerable to poverty (Rp. 354,000 to Rp 532,000)	2 (3.10)	1 (3)	1 (3.10)	0.472[a]
Aspiring middle class (Rp. 532,000-Rp. 1,200,000)	3 (4.60)	1 (3)	2 (6.30)	
Middle class (Rp. 1,200,000-Rp. 6,000,000)	21 32.30)	13 (39.40)	8 (25)	
Upper class (> Rp. 6,000,000)	8 (12.30)	2 (6.10)	6 (18.80)	
Comorbidities, n (%)				
Low comorbidities (CCI <2)	64 (98.50)	33 (100)	31 (96.90)	0.492[c]
High comorbidities (CCI ≥ 2)	1 (1.50)	0 (100)	1 (3.10)	

Characteristics	Total (n=65) n (%)	Control group (n=33) n (%)	Intervention group (n=32) n (%)	*p*-value
SLE disease activity, n (%)				
Remission (MEX SLEDAI 0–1)	8 (12.30)	5 (15.20)	3 (9.40)	
Mild (MEX SLEDAI 2-5)	56 (86.20)	28 (84.80)	28 (87.50)	0.857[c]
Moderate (MEX SLEDAI 6–9)	1 (1.50)	0 (0)	1 (3.10)	
Severe (MEX SLEDAI 10-13)	0 (0)	0 (0)	0 (0)	
Very severe (MEX SLEDAI ≥ 14)	0 (0)	0 (0)	0 (0)	
SLE clinical manifestations, n (%)				
Mucocutaneous	54 (83.10)	27 (81.80)	27 (84.40)	0.783[b]
Musculoskeletal	57 (87.70)	31 (93.90)	26 (81.30)	0.439[c]
Hematology	23 (35.40)	14 (42.40)	9 (28.10)	0.443[b]
Renal	30 (46.20)	15 (45.50)	15 (46.90)	0.909[b]
Neuropsychiatric	1 (1.50)	0 (0)	1 (3.10)	0.492[c]
Serositis	3 (4.60)	1 (3)	2 (6.30)	0.613[c]
Combination of organs	1 (1.50)	0(0)	1 (3.10)	0.492[c]
Anxiety measured with HADS, n (%)				
Mild anxiety (8–10)	12 (18.50)	3 (9.10)	9 (28.10)	
Moderate anxiety (11–15)	3 (4.60)	2 (6.10)	1 (3.10)	1.000[b]
Severe anxiety (16–21)	1 (1.50)	0 (0)	1 (3.10)	
Normal (0–7)	49 (75.40)	28 (84.80)	21 (65.60)	
Depression measured with HADS, n (%)				
Mild depression (8–10)	5 (7.70)	2 (6.10)	3 (9.40)	
Moderate depression (11–15)	1 (1.50)	0 (0)	1 (3.10)	0.490[b]
Severe depression (16–21)	0 (0)	0 (0)	0 (0)	
Normal (0–7)	59 (90.80)	31 (93.90)	28 (87.50)	
Medications, n (%)				
Steroids	61 (93.80)	32 (97)	29 (90.60)	0.355[c]
Hydroxychloroquine	51 (78.50)	27 (81.80)	24 (75)	0.504[b]
Azathioprine	8 (12.30)	2 (6.10)	6 (18.80)	0.439[b]
Mycophenolate mofetil/mycophenolic acid	40 (61.50)	22 (66.70)	18 (56.30)	0.388[b]
Cyclosporine	2 (3.10)	1 (3)	1 (3.10)	1.000[c]
Methotrexate	1 (1.50)	1 (3)	0 (0)	1.000[c]
Steroid dose (median, min-max), mg/day	2 (0–16)	2 (0–8)	3 (0–16)	0.679[a]
LupusQoL score before intervention (mean±SD)	77.91±13.95	78.34±14.31	77.48± 13.78	0.803[d]

CCI: Charlson comorbidity index, SLE: Systemic lupus erythematosus, MEX SLEDAI: Mexican Systemic Lupus Erythematosus Disease Activity, HADS: Hospital Anxiety and Depression Scale, SD: standard deviation, QoL: quality of life. *Based on monthly per capita consumption according to World Bank calculations and Statistics Indonesia, National Social Economic Survey (Susenas),

[a]Mann-Whitney U test, [b]Chi square, [c]Fisher's exact test, [d]Independent T test.

The effect of listening to Quran recitations on QoL

At baseline, there was no significant difference in mean QoL scores between the control and intervention groups (**Table 1**). However, following the intervention, the mean QoL score in the intervention group was significantly higher compared to the control group (82.33±11.37 vs. 73.47±16.16; 95% CI: 1.94−15.78; p=0.007). Within-group analysis using paired t-tests showed a significant improvement in QoL scores in the intervention group after the intervention (77.47±13.78 to 82.33±11.37; p=0.023), whereas the control group experienced a significant decline (78.34±14.31 to 73.47±16.16; p=0.007) (**Table 2**).

Table 2. Changes of the quality of life (QoL) before and after intervention within the control and the intervention groups

Groups	Pre-intervention (Mean ± SD)	Post-intervention (Mean ± SD)	Mean difference ± SD	95% CI	*p*-value[a]
Control group	78.34±14.31	73.47±16.16	-4.87±9.79	-1.39–(-8.34)	0.007*
Intervention group	77.47±13.78	82.33±11.37	4.86±11.47	0.73–8.99	0.023*
Regular listeners	79.78±10.82	85.57±9.02	5.79±10.31	0.49–11.09	0.034*
Irregular listeners	74.85±16.52	78.66±12.88	3.81±12.94	-12.13–2.63	0.273

[a] Analyzed with paired t-test; * Statistical significance at p<0.05

Subgroup analysis revealed that participants who regularly listened to Quran recitations before the study experienced a significant increase in mean QoL scores post-intervention (79.78±10.82 to 85.57±9.02; *p*=0.034). In contrast, those who did not regularly listen to recitations showed a non-significant increase (74.85±16.52 to 78.66±12.88; *p*=0.273) (**Table 2**).

Comparison of LupusQoL domain scores between the intervention and control groups showed that listening to Quran recitation significantly improved specific aspects of QoL. Notably, significant median score differences were observed in the domains of physical health (3.10 vs. -3.10; *p*<0.001) and burden to others (8.30 vs. -8.30; *p*=0.003). Other domains, including pain, emotional health, fatigue, and intimate relationships, showed non-significant trends toward improvement in the intervention group (**Table 3**).

The effects of listening to the Quran recitation on SLE disease activity, anxiety, and depression

This study indicated that there were no significant changes in the control group regarding disease activity (p=0.500), anxiety (p=0.050), or depression (p=0.063) during the study period (**Table 4**). Meanwhile, by the end of the study, there was a significant reduction in anxiety in the intervention group (p=0.030). The depression level was not significantly reduced in the intervention group after the study (p=0.060) (**Table 4**).

Table 3. Comparison of the differences in LupusQoL domains before and after the intervention between the control and intervention groups

Domains	Median differences (min-max)		*p*-value[a]
	Control group	Intervention group	
Physical health	-3.10 (-21.90–18.80)	3.10 (-25–40.60)	<0.001*
Pain	0 (-33.30–50)	4.15 (-25–58.30)	0.064
Planning	0 (-50–58.30)	0 (-58.30–66.7)	0.336
Intimate relationships	0 (-100–50)	0 (-100–50)	0.068
Burden to others	-8.30 (-66.70–25)	8.30 (-16.70–75)	0.003*
Emotional health	0 (-33.30–29.20)	4.20 (-16.70–41.70)	0.088
Body image	0 (-45–30)	0.0 (-25.0–55.0)	0.685
Fatigue	0 (-56.30–37.50)	4.20 (-16.70–41.70)	0.101

[a] Analyzed with Mann-Whitney U test
* Statistical significance at *p*<0.05

Table 4. Comparisons of systemic lupus erythematosus disease activity, anxiety, and depression before and after the intervention within both the control and intervention groups

	Pre-intervention	Post-intervention	*p*-value[a]
Control group, n (%)			
SLE Disease Activity			0.500
Remission (MEX SLEDAI 0–1)	5 (15.2)	7(21.21)	
Mild (MEX SLEDAI 2–5)	28 (84.8)	26(78.79)	
Moderate (MEX SLEDAI 6–9)	0 (0)	0(0)	
Severe (MEX SLEDAI 10-13)	0 (0)	0(0)	
Very severe (MEX SLEDAI ≥ 14)	0 (0)	0(0)	
Anxiety score (HADS-A)			0.050
Abnormal (score 11-21)	2 (6.10)	5 (15.20)	
Borderline (score 8–10)	3 (9.10)	3 (9.10)	
Normal (score 0–7)	28 (84.80)	25 (75.80)	
Depression score (HADS-D)			0.063
Abnormal (score 11-21)	0 (0)	0 (0.0)	
Borderline (score 8–10)	2 (6.10)	7 (21.2)	
Normal (score 0–7)	31 (93.90)	26 (78.80)	

	Pre-intervention	Post-intervention	*p*-value[a]
Intervention group, n (%)			
SLE Disease Activity			0.223
Remission (MEX SLEDAI 0–1)	3 (9.4)	6 (18.75)	
Mild (MEX SLEDAI 2–5)	28 (87.5)	25 (78.13)	
Moderate (MEX SLEDAI 6–9)	1 (3.1)	1 (3.2)	
Severe (MEX SLEDAI 10-13)	0 (0)	0 (0)	
Very severe (MEX SLEDAI ≥ 14)	0 (0)	0 (0)	
Anxiety score (HADS-A)			0.030*
Abnormal (score 11-21)	2 (6.30)	1 (3.10)	
Borderline (score 8–10)	9 (28.10)	3 (9.40)	
Normal (score 0–7)	21 (65.60)	28 (87.50)	
Depression score (HADS-D)			0.060
Abnormal (score 11-21)	1 (3.10)	0 (0)	
Borderline (score 8–10)	3 (9.40)	0 (0)	
Normal (score 0–7)	28 (87.50)	32 (100)	

SLE: Systemic lupus erythematosus, MEX SLEDAI: Mexican Systemic Lupus Erythematosus Disease Activity, HADS: Hospital Anxiety and Depression Scale
[a] Analyzed with McNemar's test
* Statistical significance at $p<0.05$

DISCUSSION

This study is the first quasi-experimental investigation assessing the effect of Quran recitation on the QoL in patients with SLE. The findings demonstrate that listening to Quran recitation significantly enhances overall QoL in SLE patients. These results are consistent with prior research indicating that Quran recitation yields significant psychological and physiological benefits. For example, a previous study reported improved QoL among elderly individuals during the COVID-19 pandemic following a 30-day intervention of listening to Quran recitation three times daily for 10 minutes.[39] Similarly, another study documented significant improvements in QoL among elderly hemodialysis patients who listened to Quran recitation during each session over 24 weeks, in combination with physical training.[29]

Subgroup analysis within the intervention group revealed that participants with a prior habit of listening to Quran recitation at least once a week experienced a statistically significant increase in QoL scores. In contrast, those with infrequent prior exposure showed a non-significant improvement. This variation suggests that baseline familiarity and sustained engagement with Quran recitation may potentiate its therapeutic effects. Additionally, it is plausible that a longer intervention duration is required to achieve statistically significant outcomes in individuals without prior regular exposure. Supporting this, a study reported significant QoL improvement in atrial fibrillation patients following 10 weeks of cognitive behavioral therapy, and another study observed similar outcomes in epilepsy patients after 8 weeks of intervention.[40,41] It is also important to consider the unmeasured influence of baseline spirituality and religiosity, which could mediate the intervention's effect on QoL.

By the end of the study, the intervention group showed significant improvements in two QoL domains—physical health and burden to others—compared to the control group. While other domains, such as pain, emotional health, and fatigue, also demonstrated median improvements, these were not statistically significant. To date, there is a lack of studies specifically evaluating the effects of Quran recitation on individual QoL domains in SLE. However, a study using the 36-Item Short Form Survey (SF-36) instrument reported significant improvements across both physical and mental health domains among elderly hemodialysis patients.[29]

Physiologically, listening to Quran recitation may exert its effects through the modulation of neuroendocrine and inflammatory pathways. A study found that Quran recitation induces increased alpha and theta brain wave activity, associated with relaxation and meditative states.[42]

A different study reported significant reductions in inflammatory markers, including IL-6, CRP, and ESR, following Quran recitation.[21] Additional evidence indicates reductions in heart rate and enhanced muscle relaxation as a response to Quran recitation.[43] Multiple clinical trials and meta-analyses further corroborate its beneficial effects on pain, anxiety, and depression across diverse populations and clinical conditions.[22–30]

Ghiasi et al also reported that listening to Quran recitations can be used as a useful nonpharmacological treatment to reduce anxiety.[23] In our study, we also observed a significant decrease in the proportion of SLE patients with anxiety after listening to the Quran recitation, without a significant change in disease activity. The improvement of QoL after listening to the Quran recitation may have been mediated by the improvement of anxiety. A meta-analysis of a different research group showed that the prevalence of anxiety in SLE patients was 40%.[44] In addition, studies among SLE patients showed that anxiety is one of the predictors of QoL.[45,46]

Moulaei et al studied 15 articles that were included in a systematic review. All of these studies were performed in Asian countries, and most of them examined the effect of Holy Quran recitation and listening on anxiety, stress, and depression. Based on the results of this study, Quran recitation and listening can be applied as a useful non-pharmacological treatment to reduce anxiety, stress, and depression.[26] Stress is common among patients with SLE and is associated with depression, fatigue, and disease flares.[47] Patterson et al reported that those who experienced an increase in stress had significantly worse disease activity and greater symptom burden compared to those whose stress levels remained stable or declined.[48]. DeQuattro et al reported that enhancing positive and lessening negative psychosocial factors may mitigate deleterious perceived stress, which may improve outcomes in SLE.[49]

This study has several limitations. It focused solely on one religious activity—listening to Quran recitation—without evaluating the impact of other religious practices, spirituality, or overall religiosity, which are known to influence QoL.[8] Additionally, psychosocial and environmental factors, such as social support, socioeconomic status, and living conditions, which are associated with anxiety and depression, were not assessed.[50–53] These unmeasured variables may have influenced the emotional health domain of QoL. Nonetheless, baseline QoL scores did not differ significantly between the intervention and control groups, suggesting that the observed post-intervention changes are likely attributable to the intervention itself. It is also important to consider that a longer intervention period may be required to achieve significant improvement among participants without a prior habit of listening to Quran recitations. The primary strength of this study lies in its novelty as the first to examine the effect of Quran recitation on QoL among SLE patients. The findings provide preliminary evidence supporting the integration of Quran recitation as a complementary, non-pharmacological intervention to enhance QoL in this patient population. Such an approach may be especially valuable in culturally relevant and spiritually sensitive care models.

CONCLUSION

Listening to a Quran recitation was able to significantly improve the QoL of SLE patients, especially in the subgroup that had listened to Quran recitations regularly before the onset of the study. There were also significant increases after the intervention in the domains of physical health and burden to others. The intervention of listening to the Quran recitation also significantly reduced anxiety.

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CONFLICT OF INTEREST

All the authors declare that there are no conflicts of interest.

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REFERENCES

1. Justiz Vaillant AA, Goyal A, Varacallo MA. Systemic lupus erythematosus. 2025.
2. Tian J, Zhang D, Yao X, et al. Global epidemiology of systemic lupus erythematosus: a comprehensive systematic analysis and modelling study. Ann Rheum Dis. 2023;82(3):351-6.
3. Jiang M, Near AM, Desta B, et al. Disease and economic burden increase with systemic lupus erythematosus severity 1 year before and after diagnosis: a real-world cohort study, United States, 2004–2015. Lupus Sci Med. 2021;8(1):e000503.
4. Basta F, Fasola F, Triantafyllias K, et al. Systemic lupus erythematosus (SLE) therapy: The old and the new. Rheumatol Ther. 2020;7(3):433-46.
5. Kernder A, Elefante E, Chehab G, et al. The patient's perspective: Is quality of life and disease burden a possible treatment target in systemic lupus erythematosus? Rheumatology (Oxford). 2020;59(Suppl 5):v63-8.
6. Refai RH, Hussein MF, Abdou MH, et al. A case–control study on health-related quality of life of systemic lupus erythematosus patients. Sci Rep. 2024;14(1):5234.
7. World Health Organization. WHOQOL: measuring quality of life. Geneva: World Health Organization; 2012.
8. Borges CC, dos Santos PR, Alves PM, et al. Association between spirituality/religiousness and quality of life among healthy adults: a systematic review. Health Qual Life Outcomes. 2021;19(1):246.
9. Chai PPM, Krägeloh CU, Shepherd D, et al. Stress and quality of life in international and domestic university students: cultural differences in the use of religious coping. Ment Health Relig Cult. 2012;15(3):265-77.
10. Hsien-Chuan Hsu P, Krägeloh CU, Shepherd D, et al. Religion/spirituality and quality of life of international tertiary students in New Zealand: an exploratory study. Ment Health Relig Cult. 2009;12(4):385-99.
11. Krägeloh CU, Henning MA, Billington R, et al. The relationship between quality of life and spirituality, religiousness, and personal beliefs of medical students. Acad Psychiatry. 2015;39(1):85-9.
12. Deb S, Strodl E. Quality of life and spirituality in Indian university students. Appl Res Qual Life. 2019;14(2):393-408.
13. Felicilda-Reynaldo RFD, Cruz JP, Papathanasiou IV, et al. Quality of life and the predictive roles of religiosity and spiritual coping among nursing students: A multi-country Study. J Relig Health. 2019;58(5):1573-91.
14. Lau WWF, Hui CH, Lam J, et al. The relationship between spirituality and quality of life among university students: An autoregressive cross-lagged panel analysis. High Educ. 2015;69(6):977-90.
15. Pillay N, Ramlall S, Burns JK. Spirituality, depression, and quality of life in medical students in KwaZulu-Natal. S Afr J Psychiatry. 2016;22(1):6.
16. Casu G, Ulivi G, Zaia V, et al. Spirituality, infertility-related stress, and quality of life in Brazilian infertile couples: Analysis using the actor-partner interdependence mediation model. Res Nurs Health. 2018;41(2):156-65.
17. Dadkhahtehrani T, Momenyan S, Heidari S, et al. Association between the religious coping of infertile people with their own quality of life and their spouses': A correlation study in Iranian infertile couples. Iran J Nurs Midwifery Res. 2018;23(3):198-204.
18. Gonçalves LM, Tsuge MLT, Borghi VS, et al. Spirituality, religiosity, quality of life and mental health among pantaneiros: A study involving a vulnerable population in Pantanal Wetlands, Brazil. J Relig Health. 2018;57(6):2431-43.
19. Al-Galal SA, Fakhri Taha Alshaikhli I. Analyzing brainwaves while listening to Quranic recitation compared with listening to music based on EEG signals. International Journal on Perceptive and Cognitive Computing. 2017;3(1).
20. Saleem S, Saleem T. Efficacy of music and Quranic verses in reducing cortisol level: A stress biomarker in medical undergraduates. Curr Psychol. 2023;42(8):6229-34.
21. Teimourzadeh M, Babamohamadi H, Yarmohamadi M, et al. The effect of the holy Quran recitation on inflammatory markers in hemodialysis patients in Iran: A randomized clinical trial. J Relig Health. 2024;63(6):4826-39.
22. Zarea Gavgani V, Ghojazadeh M, Sadeghi-Ghyassi F, et al. Effects of listening to Quran recitation on anxiety reduction in elective surgeries: A systematic review and meta-analysis. Arch Psychol Relig. 2022;44(2):111-26.
23. Ghiasi A, Keramat A. The effect of listening to holy quran recitation on anxiety: A systematic review. Iran J Nurs Midwifery Res. 2018;23(6):411.
24. Jabbari B, Mirghafourvand M, Sehhatie F, et al. The effect of holy Quran voice with and without translation on stress, anxiety, and depression during pregnancy: a randomized controlled trial. J Relig Health. 2020;59(1):544-54.
25. Rafique R, Anjum A, Raheem SS. Efficacy of surah Al-Rehman in managing depression in Muslim women. J Relig Health. 2019;58(2):516-26.
26. Moulaei K, Haghdoost A, Bahaadinbeigy K, et al. The effect of the holy Quran recitation and listening on anxiety, stress, and depression: A scoping review on outcomes. Health Sci Rep. 2023;6(12).
27. Hindmarch T, Dalrymple J, Smith M, et al. Spiritual interventions for cancer pain: a systematic review and narrative synthesis. BMJ Support Palliat Care. 2022;12(1):1-9.
28. Che Wan Mohd Rozali WNA, Ishak I, Mat Ludin AF, et al. The impact of listening to, reciting, or memorizing the Quran on physical and mental health of Muslims: evidence from a systematic review. Int J Public Health. 2022;67.

29. Frih B, Mkacher W, Bouzguenda A, et al. Effects of listening to holy Qur'an recitation and physical training on dialysis efficacy, functional capacity, and psychosocial outcomes in elderly patients undergoing haemodialysis. Libyan J Med. 2017;12(1):1372032.
30. Eid Aburuz M, Al-Dweik G, Ahmed FR. The effect of listening to holy Quran recital on pain and length of stay post-CABG: A randomized controlled trial. Crit Care Res Pract. 2023;2023(1).
31. World Medical Association Declaration of Helsinki. JAMA. 2013;310(20):2191.
32. McElhone K, Abbott J, Shelmerdine J, et al. Development and validation of a disease-specific health-related quality of life measure, the LupusQol, for adults with systemic lupus erythematosus. Arthritis Care Res (Hoboken). 2007;57(6):972-9.
33. Anindito B, Hidayat R, Koesnoe S, et al. Validity And reliability of lupus quality of life questionnaire in patients with systemic lupus erythematosus in Indonesia. Indonesian Journal of Rheumatology. 2018;8(2).
34. Guzmán J, Cardiel MH, Arce-Salinas A, et al. Measurement of disease activity in systemic lupus erythematosus. Prospective validation of 3 clinical indices. J Rheumatol. 1992;19(10):1551-8.
35. Uribe AG, Vilá LM, McGwin G, et al. The systemic lupus activity measure-revised, the Mexican systemic lupus erythematosus disease activity index (SLEDAI), and a modified SLEDAI-2K are adequate instruments to measure disease activity in systemic lupus erythematosus. J Rheumatol. 2004;31(10):1934-40.
36. Snaith RP. The hospital anxiety and depression scale. Health Qual Life Outcomes. 2003;1(1):29.
37. Tiksnadi BB, Triani N, Fihaya FY, et al. Validation of hospital anxiety and depression scale in an Indonesian population: a scale adaptation study. Fam Med Community Health. 2023;11(2):e001775.
38. Shatri H, Purnamandala, Hidayat R, et al. The correlation of anxiety and depression with C3 and C4 Levels and systemic lupus erythematosus activity. BMC Psychiatry. 2023;23(1):785.
39. Osama Abdel Fattah, Ayed Ali Zureigat. The effect of the holy Quran voice on the quality of life among the elderly during the coronavirus outbreak. International Journal of Psychosocial Rehabilitation. 2020;24(08):983-93.
40. Minjie Z, Zhijuan X, Xinxin S, et al. The effects of cognitive behavioral therapy on health-related quality of life, anxiety, depression, illness perception, and atrial fibrillation patients: a six-month longitudinal study. BMC Psychol. 2023;11(1):431.
41. Feng HX, Wang MX, Zhao HM, et al. Effect of cognitive behavioral intervention on anxiety, depression, and quality of life in patients with epilepsy. Am J Transl Res. 2022;14(7):5077-87.
42. Kannan MA, Ab Aziz NA, Ab Rani NS, et al. A review of the holy Quran listening and its neural correlation for its potential as a psycho-spiritual therapy. Heliyon. 2022;8(12):e12308.
43. Levine GN, Lange RA, Bairey-Merz CN, et al. Meditation and cardiovascular risk reduction. J Am Heart Assoc. 2017;6(10).
44. Zhang L, Fu T, Yin R, et al. Prevalence of depression and anxiety in systemic lupus erythematosus: a systematic review and meta-analysis. BMC Psychiatry. 2017;17(1):70.
45. Ratanasiripong NT, Ratanasiripong P. Predictive factors of quality of life among systemic lupus erythematosus patients in Thailand: a web-based cross-sectional study. Qual Life Res. 2020;29(9):2415-23.
46. Chen HJ, Wang H, Qiu LJ, et al. Relation among anxiety, depression, sleep quality, and health-related quality of life among patients with systemic lupus erythematosus: Path analysis. Patient Prefer Adherence. 2022;16:1351-8.
47. Jolly M, Katz P. Predictors of stress in patients with Lupus. Front Med (Lausanne). 2022;9.
48. Patterson S, Trupin L, Hartogensis W, et al. Perceived stress and prediction of worse disease activity and symptoms in a multiracial, multiethnic systemic lupus erythematosus cohort. Arthritis Care Res (Hoboken). 2023;75(8):1681-9.
49. DeQuattro K, Trupin L, Patterson S, et al. Positive psychosocial factors may protect against perceived stress in people with systemic lupus erythematosus with and without trauma history. Lupus Sci Med. 2024;11(1):e001060.
50. Zajkowska Z, Walsh A, Zonca V, et al. A systematic review of the association between biological markers and environmental stress risk factors for adolescent depression. J Psychiatr Res. 2021;138:163-75.
51. Remes O, Mendes JF, Templeton P. Biological, psychological, and social determinants of depression: A review of recent literature. Brain Sci. 2021;11(12):1633.
52. Narmandakh A, Roest AM, de Jonge P, et al. Psychosocial and biological risk factors of anxiety disorders in adolescents: a TRAILS report. Eur Child Adolesc Psychiatry. 2021;30(12):1969-82.
53. Wang F, Ma X, Zhao L, et al. The influence of genetic and environmental factors on anxiety among Chinese adolescents: A twin study. J Genet Psychol. 2024;185(6):415-26.