

## The Effects of Listening to Quran Recitation on Patients Undergoing Hemodialysis: A Scoping Review

Tira Nur Rahmah<sup>1\*</sup>, Kusman Ibrahim<sup>2</sup>, Sri Hartati Pratiwi<sup>2</sup>

<sup>1</sup> Master of Nursing Students, Universitas Padjadjaran, Bandung, Indonesia

<sup>2</sup> Department of Surgical-Medical Nursing, Universitas Padjadjaran, Bandung, Indonesia

Corresponding Author Email: [tira23001@mail.unpad.ac.id](mailto:tira23001@mail.unpad.ac.id)

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### LITERATURE REVIEW

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#### Keywords:

Chronic Kidney Disease, Hemodialysis, Quran

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### ABSTRACT

Hemodialysis (HD) is part of the therapy for chronic kidney disease (CKD) patients to partially replace kidney function. However, the routine process of hemodialysis, which is performed two to three times a week, has an impact to the patient's quality of life. Spiritual-based interventions, such as listening to Quran recitation, are emerging as a complementary-therapies to address the symptoms experienced by patients undergoing hemodialysis. However, the potential use of listening to the Quran in patients undergoing hemodialysis remains limited. Therefore, this study aims to explore and assess the effects of listening to Quran recitation in CKD patients undergoing hemodialysis. The scoping review was used in this study. The eligibility criteria of this study, include all full-text primary studies written in English and published between 2015 and 2024. The literature systematically searched using 3 databases, such as PubMed, Scopus, and EbscoHost with keywords "chronic kidney disease AND listening quran OR listening koran AND hemodialysis." Additionally, search engine, Google Scholar, also used to identify additional literature. A total of 9 articles were included consisting of 3 RCTs and 6 quasi experimental studies. The effects of listening to Quran recitation were divided into two benefit cluster. 1) Psychological benefits, such as reduced anxiety, lower depression, and improved quality of life. 2) Physical benefits, such as improved physical condition and reduced fatigue, lower blood pressure, and reduced systemic inflammation. The findings suggest that Quran recitation can be a valuable, non-invasive adjunctive therapy to support holistic care models for CKD patients undergoing hemodialysis.

### Key Messages:

- The exploration of the effects of listening to Quran recitation for chronic-kidney-disease undergoing hemodialysis remains limited.
- Listening to the quran recitation can be implemented in clinical practice as a supportive therapy to alleviate symptoms and burdens.

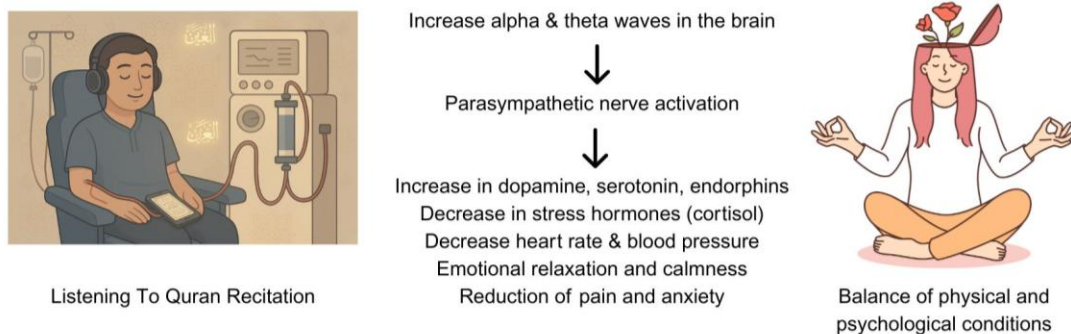
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## GRAPHICAL ABSTRACT

### Listening To Quran Recitation On Patient Undergoing Hemodialysis



<https://journalmpci.com/index.php/jhnr/index>

## INTRODUCTION

Chronic kidney disease (CKD) is a global public health problem involving approximately 10% of the population globally (1). In 2017, nearly 700 million people globally were affected by CKD, a prevalence surpassing that of diabetes, osteoarthritis, and chronic obstructive pulmonary disease (COPD) (2). Much of the disease burden stems from low awareness, inadequate prevention efforts, and limited access to treatment. In addition, CKD is one of the contributors to reduced quality of life, alongside conditions such as cancer, heart disease, and diabetes (3). Thus, CKD should be understood not only as a disease of kidney function, but also a chronic condition that affects various aspects of the life.

Hemodialysis (HD) is a treatment that filters metabolism byproducts in the blood to maintains metabolic balance, particularly important minerals, such as potassium, sodium, and calcium. Approximately 89% of all dialysis treatments are performed through hemodialysis (4). This therapy aims to partially replace kidney function among CKD patients. The routine haemodialysis process, performed two to three times a week, has impact physical conditions and particularly psychosocial and mental health conditions.

Mental and emotional distress were associated with hemodialysis resulting in lifestyle changes, persistent threat of death, and other physical symptoms (5). Other frequently reported symptoms are related to fatigue, depression, anxiety, delirium, and withdrawal from dialysis (6). These issues arise due to restrictions on physical and daily activities, changes in body image, dietary restrictions, dependence on dialysis machines, lack of access to healthcare providers, discomfort during hemodialysis, frequent hospital admissions, changes in social and family relationships, high medical and treatment costs, and fear of death (7). These problems affect the response of patients undergoing hemodialysis to their treatment and deserve attention (4). Based on the problems faced by patients undergoing hemodialysis, interventions are needed that are not only medical in nature, but also interventions that support the emotional aspects of patients (8).

Recently, spiritual care was rapidly applied in healthcare to enhance patient outcomes. Spiritual care, such as prayer have been studied and shown effectively in reducing stress and anxiety (9). For most common of Muslim patients commonly believe in the healing power of the Quran due to their values and beliefs contained in the Quran (10). The recitation of the Quran, commonly known as murottal Quran, is a recording of the Quran recited by a qari or Quran reader in a slow, harmonious tempo, paying attention to the rules of recitation and "*waqaf*" (pauses) (11).

The proposed mechanism for this effect involves the modulation of the stimulation of specific

brainwave patterns (e.g., alpha wave) and activation of the parasympathetic nervous system. The sound from Quran recitation received by ear is transmitted to the brain and processed by the auditory cortex. The impulses then stimulate the limbic system (e.g., amygdala and hippocampus). This activation reduces anxiety and promotes calmness (12). In this state, brain activity is dominated by alpha waves that emerge when a person is relaxed. The dominance of alpha waves suppresses the sympathetic nervous system (associated with stress and high alertness) and activates the parasympathetic nervous system, which is responsible for calmness, recovery, and rest (rest and digest) (13). The activation of the parasympathetic nervous system triggers a decrease in heart rate, blood pressure, and slows down breathing, creating a physiologically calming condition (14).

While individual clinical trials have shown therapeutic effects of listening to Quran recitation in large populations, a systematic search mapping of its benefits among hemodialysis population remain limited. Therefore, a scoping review is needed to explore the effects of listening to Quran recitation on patients undergoing hemodialysis. This study is expected to broaden understanding of the role of spiritual-based interventions in the context of health and serve as a basis for recommendation on the application of listening to Quran recitation in clinical practice for hemodialysis patients.

## **METHODS**

### **Study Design**

This study used a scoping review design. The framework of this study used consists of several stages, namely identification of research questions, identification of relevant research results, selection of studies, data mapping, compilation of research results and reporting of research results (15).

### **Search Strategy and Eligibility Criteria**

The literature was searched using three databases, namely PubMed, Scopus, and EbscoHost. Additionally, a search engine, Google Scholar, used to identify additional sources. PubMed was selected because this database is the primary database in the field of health and biomedicine, includes studies on non-pharmacological interventions such as listening to Quran recitation in clinical settings such as hemodialysis. Scopus was selected because it is a multidisciplinary database with a broad reach and covering global health literature. EbscoHost was selected because this database provides access to various specialized databases in the fields of nursing. Google Scholar was selected because it used to identify grey literature or articles from journals that may not be indexed in formal databases such as PubMed or Scopus. The research questions and eligibility criteria for this research article used the PCC (Population, Concept, and Context) approach. The research questions in this study are: What are the benefits of Quran recitation listening therapy for patients undergoing hemodialysis?

P (Population) : Chronic kidney disease

C (Concept) : Listening quran OR listening koran

C (Context) : Hemodialysis

The research for articles was conducted using a combination of appropriate keywords for each database and the search will be reported in PRISMA flowchart to illustrate the stages of the literature selection process (Figure 1).

The inclusion criteria in this review are full-text articles in English, with randomized control trial and quasi experimental designs, articles are original research, and the time setting is the last 10 years (2015-2024). Additionally, the exclusion criteria, including full-text articles with non-English, non-clinical trials (eg. randomized controlled trials/ RCTs, quasi experimental), non-original research, articles published more than 10 years (less than 2015). The literature was searched using keywords adjusted Medical Subject Heading (MeSH) term.

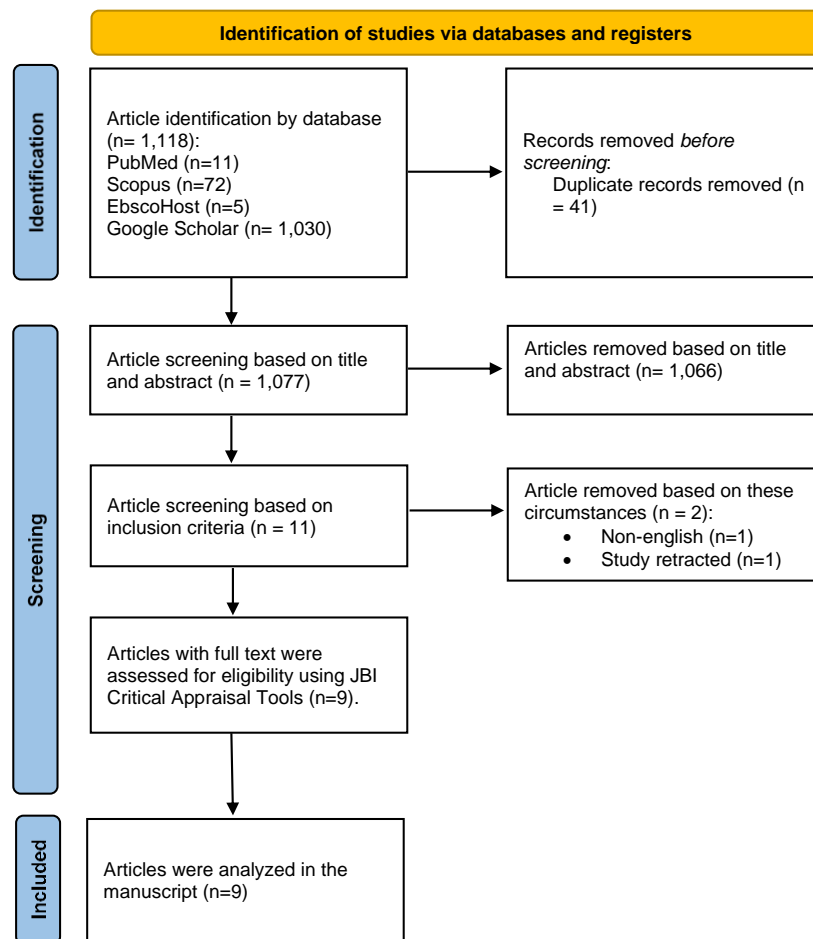


Figure 1. PRISMA flow diagram

The initial literature search from databases and search engine yielded 1,118 articles. After removed 41 duplicates, 1077 were screened for title and abstract. A total of 1.066 articles excluded due irrelevant titles and abstracts, 11 studies leave for full-text assessment. From 11 studies, 2 studies removed due to study published in non-English and study was retracted. Finally, 9 studies included in this study.

### Data Extraction and Data Analysis

All authors read and analyze articles that have been collected from three databases and one search engine. Next, the authors made a resume of the results of the article analysis. The resume was then extracted using a manual table including author, year, country, research design, population and sample, procedure, and research results. The extraction table was used to make it easier for authors and reviewers to understand the results of the research. This data extraction is carried out by two authors independently and each is an expert in their field. If there are differences in opinion between the two authors regarding the extracted data, a third author is involved to help resolve the discrepancies. The third author is responsible for verifying and confirming the accuracy of the data extraction to ensure the results are more accurate and valid.

Data collection and data analysis in this study using prism flowcharts were conducted by all authors during the data selection and collection process. Steps included identifying duplicate studies, selecting titles and abstracts, and ensuring studies had full text. The collected articles were then read in full and analyzed by all authors. Data analysis used a descriptive approach. Before being analyzed, the authors re-examined the selected articles based on the inclusion and exclusion criteria. After analyzing, the results obtained from the review were classified based on similar objectives and then described in the results of this study.

### Study Selection and Quality Appraisal

The authors checked for duplication in the initial article selection using the Mendeley reference manager. Next, the authors checked the titles, abstracts, and read the articles in their entirety for relevance to the selected research topic. The authors then scored each article that met the inclusion criteria using The Joanna Briggs Institute (JBI) using statement scores of yes, no, unclear, and not applicable (16). The score of yes was given a value of 1, while the other scores were given a value of 0. The results of the assessment of each article were totaled to determine the quality of the journal to be used. The author determines an article with a good article standard if the result is above 75% based on the revelation of the topic and article criteria.

Table 1. JBI Critical Appraisal Results

Study	Design	JBI Critical Appraisal Tool
(8)	RCT	10/13 (77%)
(17)	RCT	11/13 (84%)
(18)	Quasi Experimental	9/9 (100%)
(19)	Quasi Experimental	8/9 (88,8%)
(20)	Quasi Experimental	9/9 (100%)
(21)	Quasi Experimental	9/9 (100%)
(22)	RCT	11/13 (84%)
(23)	Quasi Experimental	7/9 (77,7%)
(24)	Quasi Experimental	9/9 (100%)

The initial literature search from several databases and one search engine yielded 1,118 research articles. Next, the authors screened the studies based on title, abstract, and pre-determined inclusion criteria and 11 articles remained. Next, the author read the full text of the article, leaving 9 research articles. The authors assessed the quality of the articles using the JBI critical appraisal tool. The results of the JBI assessment showed that most studies were of good quality (>75%) (Table 1). As a result, the authors included 9 articles in this review and the number is depicted on the prism diagram.

## RESULTS

### Study Results

The study design of included studies was 3 RCTs and 6 quasi experimental studies. The studies were conducted in three countries, namely Iran (n=3), Tunisia (n=1), and Indonesia (n=5). This study found that the intervention used surah Yasin (n = 3), surah Ar-Rahman (n = 3), and varied surah (n = 1). However, two studies did not report the surah used. Additionally, the most frequently used time in some of these studies was 4 weeks.

### The Effects of Listening to Quran Recitation

The finding of this study found the benefits of listening to Quran recitation in patients undergoing hemodialysis, categorized into two categories, such as psychological benefits and physiological benefits. The psychological benefits include anxiety, depression, and quality of life. Additionally, physical benefits include physical condition and fatigue, blood pressure, and systemic inflammation.

#### Psychological Benefits

##### Anxiety

In a study by Babamohamadi et al., hemodialysis patients who listened to Quran recitations three times per week showed a significant reduction in anxiety levels (128.5±14.4 to 82.1±11.3) (8). A similar effect was observed in the study by Frih et al., where Quran recitation was combined with interdialytic resistance training, resulting in decreased anxiety levels (15.8±2.5 to 9.3±2.1) (18). Additionally, in a study where patients listened to Quran recitation once a week, followed by monitoring through video calls and educational sessions, anxiety levels were reduced (55.03±4.331 to 41.44±4.009) (20).

Table 2. Data Extraction

No.	Study	Design	Country	Sample	Aim	Intervention	Result
1	(8)	RCT	Iran	60 hemodialysis patients Intervention group; listened to Quran recitation (n=30) Control group; standard care (n=30)	Lowes anxiety	<ul style="list-style-type: none"> <li>Frequency: 3 times/week for 1 month</li> <li>Duration: 20 minutes (5 minutes before HD, 15 minutes continuing until the start of HD)</li> <li>Tools: MP3 and Headphones</li> <li>Surah: Yasin</li> </ul>	Effective in reducing anxiety levels Mean (SD): <ul style="list-style-type: none"> <li>Intervention: STAI score = 128.5 (<math>\pm</math> 14.4) to 82.1 (<math>\pm</math> 11.3)</li> <li>Control: STAI score = 118.3 (<math>\pm</math> 14.5) to 120.1 (<math>\pm</math> 14.4)</li> </ul>
2	(17)	RCT	Iran	54 hemodialysis patients Intervention group; listened to Quran recitation (n=27) Control group; standard care (n=27)	Lowes depression	<ul style="list-style-type: none"> <li>Frequency: 3 times/week for 1 month</li> <li>Duration: 20 minutes (15 minutes continued until the start of HD)</li> <li>Tools: MP3 and Headphones</li> <li>Surah: Yasin</li> </ul>	Effective in reducing depression Mean (SD): <ul style="list-style-type: none"> <li>Intervention: BDI-II score = 33.6 (<math>\pm</math> 6.7) to 14.5 (<math>\pm</math> 4.8)</li> <li>Control: 29.3 (<math>\pm</math> 9.0) to 31.6 (<math>\pm</math> 9.2)</li> </ul>
3	(18)	Quasi Experimental	Tunisia	51 hemodialysis patients Intervention group; listened to Quran recitation combined with resistance training (n=28) Control group; only resistance training (n=23)	Improved physical condition and quality of life, Reduction of anxiety.	<ul style="list-style-type: none"> <li>Frequency: 3 times/week for 24 weeks</li> <li>Duration: 20 minutes (5 minutes before dialysis and continuing up to 15 minutes after the start of dialysis)</li> <li>Tools: MP3 and Headphones</li> <li>Surah: Not reported</li> </ul>	Effective in improving physical condition and quality of life and reducing anxiety Mean (SD): Intervention: <ul style="list-style-type: none"> <li>PCS = 49.7 (<math>\pm</math> 7.9) to 70.0 (<math>\pm</math> 7.1)</li> <li>MCS = 53.2 (<math>\pm</math> 9.1) to 76.3 (<math>\pm</math> 10.2)</li> <li>Anxiety = 15.8 (<math>\pm</math> 2.5) to 9.3 (<math>\pm</math> 2.1)</li> <li>Kt/V = 1.0 (<math>\pm</math> 0.2) to 1.3 (<math>\pm</math> 0.1)</li> </ul> Control: <ul style="list-style-type: none"> <li>PCS = 52.5 (<math>\pm</math> 9.5) to 64.9 (<math>\pm</math> 11.7)</li> <li>MCS = 53.8 (<math>\pm</math> 10.1) to 60.7 (<math>\pm</math> 11.1)</li> <li>Anxiety = 16.2 (<math>\pm</math> 1.5) to 13.2 (<math>\pm</math> 1.1)</li> <li>Kt/V = 1.0 (<math>\pm</math> 0.1) to 1.0 (<math>\pm</math> 0.1)</li> </ul>
4	(19)	Quasi Experimental	Indonesia	28 hemodialysis patients Intervention group; listened to Quran recitation (n=14)	Lowes depression	<ul style="list-style-type: none"> <li>Frequency: 2 times/week for 1 month.</li> <li>Duration: 45 minutes</li> </ul>	Effective as a non-pharmacological therapy in reducing depression Mean (SD):

No.	Study	Design	Country	Sample	Aim	Intervention	Result
				Control group; standard care (n=14)		<ul style="list-style-type: none"> <li>Surah: Fatihah, Al-Baqarah (ayat 1-5, 102, 163-164, 255), Ayat Kursi, Al-Baqarah 285-286, Ali Imron ayat 18-19, Al'Araf ayat 45-56, Al-Mukminin 115-118, Ash Soffat ayat 1-10, Al-Ahqaaf ayat 29-32, Al-Hasyr:21-24, Al-Jin:1-9, Al-Ikhlash, Al-Falaq, dan An-Naas</li> </ul>	<ul style="list-style-type: none"> <li>Intervention: BDI score = 27.13 (<math>\pm 3.95</math>) to 8.86 (<math>\pm 8.30</math>)</li> <li>Control: BDI score = 27.93 (<math>\pm 6.21</math>) to 20.92 (<math>\pm 9.20</math>)</li> </ul>
5	(20)	Quasi Experimental	Indonesia	34 hemodialysis patients (one group)	Lower anxiety levels	<ul style="list-style-type: none"> <li>Frequency: 1 time/day of the week</li> <li>Duration: 15-minute recitation</li> <li>Monitored the respondents through video calls to ensure the intervention was carried out.</li> <li>The psychoeducation session lasts 25-45 minutes.</li> <li>Tools: MP3 and headphones, volume to suit comfort</li> <li>Surah: Ar-Rahman</li> </ul>	<p>Effective in reducing anxiety levels</p> <p>Mean (SD):</p> <p>ZSAS score = 55.03 (<math>\pm 4.331</math>) to 41.44 (<math>\pm 4.009</math>)</p>
6	(21)	Quasi Experimental	Indonesia	40 hemodialysis patients Intervention group; listened to Quran recitation combined with back massage (n=20) Control group; standard care (n=20)	Reduces fatigue and improves quality of life	<ul style="list-style-type: none"> <li>Frequency: 2 times a week for 3 weeks (listening to Qur'an and back massage).</li> <li>Duration: 15 minutes (in the first hour of HD).</li> </ul>	<p>Effective in reducing fatigue and improving quality of life</p> <p>Mean (SD):</p> <p>Intervention:</p> <ul style="list-style-type: none"> <li>FACIT fatigue = 23.45 (<math>\pm 5.85</math>) to 36.7 (<math>\pm 2.1</math>)</li> <li>KDQOL = 47.25 (<math>\pm 7.29</math>) to 61.2 (<math>\pm 5.8</math>)</li> </ul> <p>Control:</p>

No.	Study	Design	Country	Sample	Aim	Intervention	Result
						<ul style="list-style-type: none"> <li>Tools: MP3 with earphones, volume to preference</li> <li>Surah: Ar-Rahman</li> </ul>	<ul style="list-style-type: none"> <li>FACIT fatigue = 25.55 (<math>\pm 4.17</math>) to 23.45 (<math>\pm 5.85</math>)</li> <li>KDQOL = 48.29 (<math>\pm 7.09</math>) to 49.50 (<math>\pm 8.63</math>)</li> </ul>
7	(22)	RCT	Iran	50 hemodialysis patients Intervention group; listened to Quran recitation (n=25) Control group; the control group was given headphones with silent mode (n=25)	Reduces systemic inflammation	<ul style="list-style-type: none"> <li>Frequency: 3 times a week for 1 month</li> <li>Duration: 20 minutes (5 minutes before HD and continuing up to 15 minutes after the start of HD)</li> <li>Tools: MP3 and headphones</li> <li>Surah: Yasin</li> </ul>	Effective in reducing systemic inflammation Mean (SD): Intervention: <ul style="list-style-type: none"> <li>IL-6 = 26.88 (<math>\pm 44.34</math>) to 6.63 (<math>\pm 5.01</math>)</li> <li>ESR = 30.72 (<math>\pm 23.57</math>) to 13.96 (<math>\pm 15.51</math>)</li> <li>CRP = 33 (<math>\pm 28.06</math>) to 13.08 (<math>\pm 16.47</math>)</li> </ul> Control: <ul style="list-style-type: none"> <li>IL-6 = 49.50 (<math>\pm 8.63</math>) to 43.82 (<math>\pm 45.26</math>)</li> <li>ESR = 21.32 (<math>\pm 16.64</math>) to 24.56 (<math>\pm 19</math>)</li> <li>CRP = 23.48 (<math>\pm 24.3</math>) to 30.44 (<math>\pm 25.76</math>)</li> </ul>
8	(23)	Quasi Experimental	Indonesia	17 hemodialysis patients (one group)	Lower blood pressure	<ul style="list-style-type: none"> <li>Frequency: Recitation and SSMB (slow stroke back massage) were performed 3 times at 2-day intervals</li> <li>Surah: Not reported</li> </ul>	Effective in lowering blood pressure Mean (SD): Systolic = 170.41 ( $\pm 25.57$ ) to 145.94 ( $\pm 22.50$ ) Diastolic = 119.18 ( $\pm 9.14$ ) to 108.65 ( $\pm 13.15$ )
9	(24)	Quasi Experimental	Indonesia	58 hemodialysis patients Intervention group; listened to Quran recitation (n=29) Control group; standard care (n=29)	Lowens anxiety	<ul style="list-style-type: none"> <li>Frequency: 30 days</li> <li>Surah: Ar-Rahman</li> </ul>	Effective as distraction relaxation therapy to reduce anxiety Intervention: Anxiety = 32.7 to 23.6 (p=0.00) Control: Not mentioned

**Note: Abbreviations**

STAI (State-Trait Anxiety Inventory), BDI-II (Beck Depression Inventory-II), MCS (Mental Component Summary), PCS (Physical Component Summary), ZSAS (Zung Self Anxiety Rating Scale), FACIT-fatigue (Functional Assessment of Chronic Illness Therapy-fatigue), KDQOL (Kidney Disease Quality of Life), IL-6 (Interleukin-6), ESR (Erythrocyte Sedimentation Rate), CRP (C-Reactive Protein).

## **Depression**

Listening to Quran recitation also contributed to alleviating depression in hemodialysis patients. In a study by Babamohamadi et al., patients who listened to Quran recitation three times per week reported reduced depression scores ( $33.6 \pm 6.7$  to  $14.5 \pm 4.8$ ) (17). Similarly, another study with sessions twice a week also demonstrated a decrease in depression levels ( $27.13 \pm 3.95$  to  $8.86 \pm 8.30$ ) (19).

## **Quality of Life**

Quality of life reflects the extent to which an individual is satisfied with life as a whole, particularly in coping with health-related challenges. For patients undergoing hemodialysis, quality of life often declines due to the chronic nature of the condition (25). In the study by Frih et al., patients who listened to Quran recitation three times per week combined with resistance training experienced improved quality of life ( $53.2 \pm 9.1$  to  $76.3 \pm 10.2$ ) (18). Similarly, in another study, listening to Quran recitation twice a week along with back massage also led to a quality-of-life improvement ( $47.25 \pm 7.29$  to  $61.2 \pm 5.8$ ) (21).

## **Physical Benefits**

### **Physical Condition and Fatigue**

In the study by Frih et al., Quran recitation three times per week for one month, combined with interdialytic resistance training, improved physical function ( $49.7 \pm 7.9$  to  $70.0 \pm 7.1$ ) (18). Regarding fatigue, Quran recitation twice a week for three weeks in combination with back massage was shown to reduce fatigue significantly ( $23.4 \pm 5.85$  to  $36.7 \pm 2.1$ ) (21).

## **Blood Pressure**

In another study, slow stroke back massage (SSBM) was combined with Quran recitation to reduce blood pressure. A significant reduction was observed in both systolic ( $170.41 \pm 25.57$  to  $145.94 \pm 22.50$ ) and diastolic blood pressure ( $119.18 \pm 9.14$  to  $108.65 \pm 13.15$ ) after the intervention (23).

## **Systemic Inflammation**

Quran recitation was provided three times a week for 20 minutes over a month. Among hemodialysis patients, this intervention was associated with reduced inflammatory markers, including a mean decrease in IL-6 by 20.2 pg/ml, ESR by 16.8 mm/hour, and CRP by 19.9 mg/dl (22).

## **DISCUSSION**

This scoping review identified that listening to Quran recitation interventions provide significant psychological and physical benefits for patients with chronic kidney disease (CKD) undergoing hemodialysis. As a form of audio relaxation therapy, listening to Quran recitation offers a positive impact by reducing psychological distress and improving physical condition throughout the ongoing hemodialysis process.

From a psychological perspective, one major benefit is anxiety reduction. Several studies showed decreased anxiety scores after listening to Quran recitation. The calming effect of Quranic verses is believed to activate the parasympathetic nervous system, which lowers heart rate and blood pressure while enhancing relaxation (13). Listening to Quran recitation functions as an effective distraction, triggering natural endorphin release and balancing brain waves, which generate a sense of comfort and reduce anxiety. Positive responses were observed among CKD patients undergoing hemodialysis, who appeared calm and relaxed while listening to Quranic recitation, indicating a state of emotional comfort and reduced anxiety (24).

Listening to Quran recitation was also found to lower depression. As part of Islamic psychological therapy, Quranic recitation is believed to influence behavior and provide psychological healing effects (19). Babamohamadi et al. found significant reductions in depression among hemodialysis patients following Quranic listening interventions. Since depression often results from the burden of lifelong dialysis treatment (17), such interventions offer meaningful support. Comparisons between listening to Quran and classical music using EEG indicated smoother brain signals with Quran recitation, reflecting greater

calmness. Further studies revealed that Quranic listening increased delta and alpha waves, enhancing relaxation and attention more effectively than classical music (26).

Beyond anxiety and depression, another psychological benefit is improved quality of life. This may be attributed to the sound and meaning of Quranic verses in Arabic, which evoke a profound spiritual experience among Muslim listeners (18). From a psychological standpoint, this calming effect may function through positive reinforcement and pleasant auditory stimuli, similar to how music therapy protects the mind from pain (27).

Listening to Quran recitation also provides physical benefits. Its physiological benefit work through two mechanisms: the meaning of the verses for those who understand them and the auditory qualities of the Arabic recitation itself, which act as sound therapy even for those unfamiliar with the language (18). Spiritual therapy complements medical treatment by accelerating healing and is widely practiced in developed countries (23). Quran recitation is believed to boost endorphin production, reduce stress, and promote relaxation, leading to decreased blood pressure, heart rate, and pulse (8). It also modulates epinephrine and norepinephrine levels, improving mood, heart rate, and blood pressure while enhancing happiness and life expectancy. Regulation of these hormones is associated with better sleep, digestion, bone health, and overall physical and mental well-being (28).

The potential mechanism underlying these effects involves the regulation of brainwave activity—particularly the alpha waves—and the activation of the parasympathetic nervous system. When the sound of Quran recitation is heard, it is transmitted through the ears to the auditory cortex, where it is processed. This stimulation then affects the limbic system, which is associated with emotional regulation (12). This process contributes to reduced anxiety and promotes a sense of calm. In this relaxed state, alpha waves become more dominant. Increased alpha wave activity is known to suppress the sympathetic nervous system, which is related to stress and alertness, and instead activates the parasympathetic nervous system, which supports relaxation and recovery (13). As a result, physiological changes occur, such as a decrease in heart rate, blood pressure, and respiratory rate, creating a calming effect on the body. Additionally, this process stimulates the release of hormones related to well-being, including endorphins (which help reduce pain and enhance mood), serotonin (which regulates mood and promotes happiness), and dopamine (which is involved in pleasure and reward responses) (14). On the other hand, levels of stress hormones like cortisol tend to decrease (28).

Quran recitation has also shown potential to reduce systemic inflammation. Studies monitoring inflammatory biomarkers such as CRP reported decreases after Quran listening interventions. While the exact biological mechanisms require further investigation, these findings suggest that spiritual approaches can be integrated into the holistic management of hemodialysis patients (22).

## **IMPLICATIONS**

The findings of this review offer meaningful contributions to the growing body of literature on spiritual-based interventions, especially Quran recitation in the context of hemodialysis care. This review highlights its cultural and spiritual relevance, simplicity of application, and non-pharmacological nature. These results also address a critical gap previously identified in the literature—namely, the lack of systematic reviews analyzing the impact of Quran recitation on both physical and psychological aspects of hemodialysis patients. Theoretically, the findings support the integration of spiritual approaches within a biopsychosocial framework of care. Practically, Quran recitation can be implemented as an adjunct therapy to improve patient comfort and emotional stability during treatment. Thus, this review encourages the development of more holistic and contextual health services.

## **LIMITATIONS**

This review identified considerable heterogeneity in the intervention protocols across studies. Variations included differences in duration, frequency, and the combination of Quran recitation with other approaches such as resistance exercises, educational sessions, back massage, and slow stroke back massage (SSBM). These inconsistencies present challenges in synthesizing the data and limit the generalizability of the findings.

## CONCLUSION

This scoping review indicates that listening to Quran recitation offers both psychological and physical benefits for patients undergoing hemodialysis. Psychologically, it helps reduce anxiety and depression, and improves quality of life by promoting a sense of calm and comfort. Physically, it contributes to better bodily function by reducing fatigue, lowering blood pressure, and decreasing systemic inflammation commonly associated with chronic kidney disease. As healthcare moves toward more patient-centered and holistic models, integrating culturally congruent spiritual practices like listening to Quran recitation can be an important, non-invasive strategy to improve patient well-being and support them in managing the challenges of chronic illness. However, the heterogeneity of intervention protocols—such as varying durations, frequencies, and additional combined therapies—poses challenges for drawing universal conclusions. Future studies should adopt more standardized and measurable protocols to objectively assess the specific effects of Quran recitation in this patient population.

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## CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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