Quality : Jurnal Kesehatan
Volume 19, Nomor 1 Tahun 2025, pp 23-35
pISSN : 1978-4325, eISSN : 2655-2434, DOI: 10.36082/qjk.v19i1.2337

ANXIETY REDUCTION IN CHRONIC KIDNEY DISEASE (CKD) PATIENTS UNDERGOING HEMODIALYSIS THROUGH ACUPRESSURE AND QURANIC RECITATION INTERVENTIONS

Maya Ariska[1], Supriyadi[2], Sri Endang Windiarti[3]
[1,2,3] Master of Applied Nursing Poltekkes Kemenkes Semarang, Indonesia

Information of Article:

Genesis of Article:
Received: 17 January 2025
Revised: 21 March 2025
Accepted: 28 May 2025
Published: 12 June 2025

Keywords:
Acupressure, Quranic recitation, Anxiety, Chronic Kidney Disease, Hemodialysis

This is an open access article under the CC-BY-SA license Copyright © 2025 by Author. Published by Politeknik Kesehatan Kemenkes Jakarta I

Abstract

Background: *Chronic Kidney Disease (CKD) is a progressive condition that leads to a gradual decline in kidney function, often requiring lifelong hemodialysis. Hemodialysis can negatively impact psychological well-being, particularly increasing anxiety, which affects the patient's quality of life. Non-pharmacological interventions such as acupressure and Quranic recitation have been utilized to reduce anxiety, but their combined effectiveness remains underexplored.*
Objective: *This study aims to analysis the effect of acupressure therapy and Quranic recitationon anxiety levels in CKD patients undergoing hemodialysis, comparing their impact with a single intervention and a control group.*
Methods: *A pretest-posttest experimental design with a control group was used. A total of 40 CKD patients undergoing hemodialysis were selected through simple random sampling. The intervention was administered twice a week for six weeks, consisting of acupressure at Ki-1, Li-4, and EX-3 points and Quranic recitation (Qira'ah Muzammil Hasballah) for 15 minutes. The control group received standard hospital procedures, including education and pharmacological therapy. Anxiety levels were measured using the Hamilton Anxiety Rating Scale (HARS) and analyzed with bivariate and multivariate tests.*
Results: *The combination of acupressure and Quranic recitation significantly reduced anxiety ($p=0.000<0.05$). The combined therapy resulted in a 6.2-point reduction in anxiety, with an effect size of 0.05, making it the most effective intervention.*
Conclusion: *Acupressure combined with Quranic recitationis effective in reducing anxiety in CKD patients undergoing hemodialysis and can serve as a complementary nursing intervention.*

Corresponding author:
Maya Ariska
Jl. PDAM Tirta Krueng Meureudu, Pidie Jaya, Aceh
Email*:* *maya.ariska357@gmail.com*

Introduction

Chronic Kidney Disease (CKD) is a medical condition characterized by a gradual decline in kidney function that eventually requires renal replacement therapy such as dialysis or transplantation (Satyanarayana R. et al, 2022). Over the past two decades, CKD has become one of the leading causes of death globally. The Global Burden of Disease Study in 2010 reported that CKD ranked 27th as a cause of death in the world and increased to 11th by 2020 (Global Burden of Disease Study, 2022). More than 800 million people worldwide suffer from CKD, with a higher prevalence in the elderly as well as individuals with Diabetes Mellitus (DM) and hypertension (Kovesdy, 2022). In Indonesia, the prevalence of CKD increased from 0.2% to 0.3% in 2018, with Aceh as one of the 12 provinces with the highest number of cases, reaching 13,389 patients, of which approximately 14% underwent hemodialysis (Riskesdas, 2018).

CKD has a multifactorial etiology with various contributing risk factors. DM and hypertension are the main causes that can progressively damage the kidneys (CDC, 2023). Other causes include glomerulonephritis, polycystic kidney disease, use of nephrotoxic drugs, and autoimmune diseases such as lupus. CKD can be fatal if not treated with renal replacement therapy. Hemodialysis (HD) is the main treatment method that aims to eliminate metabolic waste products, balance fluid and electrolytes, and reduce the workload of the kidneys(Bello et al., 2022). However, it does not cure CKD and requires patients to undergo the procedure regularly for life (Hibatullah, 2023).

The long-term process of hemodialysis often leads to physical and psychological complications, including anemia, cardiovascular disorders, infections and fatigue (Elezi et al., 2023). In addition, patients face economic challenges, activity limitations, and lifestyle changes that have a significant impact on mental health, especially anxiety and depression (Emilia et al., 2020). The prevalence of anxiety in hemodialysis patients varies across countries, with incidence rates of 68.75% in India (Gadia et al., 2020), 23.7% in Saudi Arabia (Mosleh et al., 2020), 38% to 53% in the Netherlands (Robbert W et al., 2019), and approximately 46.8% in Indonesia (Anisah & Maliya, 2021). In Aceh, the prevalence of anxiety reached 46%, while depression was 30.5% (Marthoenis et al., 2021).

Anxiety that is not managed properly can worsen the patient's health condition, increase the risk of morbidity, and cause activity disorders, hypertension, and loss of consciousness that lead to delays or failure of hemodialysis (Huang et al., 2021). Anxiety treatment can be pharmacologic or non-pharmacologic. The use of anxiolytic drugs can cause side effects and dependence, so alternative non-pharmacological therapies that are safer and more effective are needed. Some methods that have been studied include relaxation techniques(Nipa et al., 2021), hypnosis (Abensur Vuillaume et al., 2022), aromatherapy (İnci & Çetinkaya, 2023), and mindfulness therapy (Haghshenas et al., 2019). However, the effectiveness of these interventions remains variable, with results not always significant in the long term.

Acupressure and quranic recitation therapy are promising complementary approaches in reducing anxiety in hemodialysis patients. Acupressure, as a traditional Chinese massage technique, works by stimulating specific acupuncture points to increase the body's energy, reduce stress, and increase the production of endorphins and serotonin (Hmwe et al., 2015). Several studies have shown that acupressure is effective in reducing anxiety in patients with chronic diseases, patients undergoing medical procedures, as well as healthcare workers experiencing occupational stress (Cho et al., 2021). In addition to acupressure, quranic recitation therapy is a spiritually-based distraction technique that has been shown to have positive effects in reducing anxiety and promoting psychological calmness. Studies show that listening to quranic recitation can reduce anxiety during labor (Kocak et al., 2022), anesthesia procedures (Susanti et al., 2019), as well as in other medical conditions.

Open Access: http://ejournal.poltekkesjakarta1.ac.id/index.php/adm
Email: jurnalquality@poltekkesjakarta1.ac.id

Considering the impact of anxiety in hemodialysis patients as well as the limitations of conventional therapies, this study aimed to explore the effectiveness of combined acupressure and Quranic recitationtherapy in reducing anxiety in CKD patients undergoing hemodialysis and compare the effect of combined therapy with single therapy and a control group. This study is expected to provide scientific evidence regarding the benefits of complementary therapies in improving the quality of life of patients as well as recommendations for nursing practice in the management of anxiety of hemodialysis patients.

Methods

This study is a True Experiment with a pre-test-post-test control group design. The study population consists of chronic kidney disease (CKD) patients undergoing hemodialysis at Pidie Jaya General Hospital, Aceh Province. The study was conducted from September 2024 to November 2024. The respondents were divided into four groups, Acupressure group, Al Quran recitation group, Combination of acupressure and Al Quran recitation group, and Control group, which received interventions according to standard hospital procedures.The sample was selected using the simple random sampling technique based on inclusion and exclusion criteria. Each group initially consisted of eight participants. To anticipate a 10% dropout rate, an additional two participants were included per group, resulting in a total of 10 participants per group. Thus, the total number of respondents, including both intervention and control groups, was 40 participants. Participants included in the study must Undergo routine hemodialysis in a hemodialysis unit, be Muslim, be fully conscious (compos mentis) and able to communicate effectively, have no hearing impairment, undergo hemodialysis therapy twice a week, experience moderate anxiety, have a minimum hemodialysis history of three months and have Hb levels >7 g/dL.

This study obtained ethical approval from the Health Research Ethics Committee (KEPK) of Poltekkes Kemenkes Semarang, as stated in approval letter number No. 0999/EA/KEPK/2024. Before data collection, the researcher explained the study's objectives, procedures, and other relevant information to the respondents. Participants then signed an informed consent form. The sample was selected through simple random sampling and divided into four groups Intervention groups, consisting of the acupressure group, Al Quran recitation group, and combination group and Control group. All participants underwent a pre-test to assess their anxiety levels using the Hamilton Anxiety Rating Scale (HARS) before the intervention.

The intervention was administered on non-hemodialysis days, one day before hemodialysis therapy. The procedures for each group were as follows, acupressure group, applied pressure to Ki-1, Li-4, and EX-3 points for three minutes per point., Al Quran recitation group; listened to an audio recitation of Surah Ar-Rahman by Qari Muzammil Hasballah at 60 dB volume using earphones for 15 minutes, Combination group; Received acupressure therapy (Ki-1, Li-4, and EX-3 points) combined with Al Quran recitation for 15 minutes, and Control group; Received standard hospital procedures. The intervention was conducted twice a week for six weeks. After completing the intervention period, both the intervention and control groups underwent a post-test using the same method to measure anxiety levels with HARS. Bivariate analysis using Paired T-test and One-way ANOVA. Multivariate analysis using General Linear Model (GLM) with post hoc Least Significant Difference (LSD) test

Results

Tabel 1. Frequency Distribution of Respondents

Variabel		n	*Mean*	SD	*Min*	*Max*
Age (Year)		40	48	11.50	27	69
Hemodialysis Duration (Months)		40	29.4	15.81	12	60
Anxity Score (HARS)		40	23	2.05	20	27
Family Support Score		40	13.6	2.09	10	19
Gender:						
	Male	20	50.0	%		
	Female	20	50.0	%		
Marital Status:						
	Single	4	10.0	%		
	Married	30	75.0	%		
	Widower	3	7.5	%		
	Widow	3	7.5	%		
Education:						
	Elementary	6	15.0	%		
	Junior School	5	12.5	%		
	High School	19	47.5	%		
	University	10	25.0	%		
Occupation:						
	Unempolyed	10	25.0	%		
	Laborer	5	12.5	%		
	Farmer	8	20.0	%		
	Self-Employed	9	22.5	%		
	Privat employed	2	5.0	%		
	Civil Servant	6	15	%		

Table 1 presents the characteristics of patients with Chronic Kidney Disease (CKD) undergoing Hemodialysis (HD) at Pidie Jaya General Hospital, Aceh. The average patient age is 48 years, ranging from 27 to 69 years. The mean duration of HD treatment is 29 months, with the shortest duration being 12 months and the longest reaching 60 months. Prior to the intervention, anxiety levels measured using the Hamilton Anxiety Rating Scale (HARS) had an average score of 23, while family support had an average score of 13.6. The respondents included an equal number of male and female patients, with the majority being married (75%). Regarding education, most respondents had completed high school (47.5%), while in terms of occupation, the largest proportion of patients were unemployed (25%), followed by 22.5% who were self-employed.

Tabel 2. Homogeneity Analysis

Variabel	Perlakuan																					
	Acupressure					Al Quran recitation					Acupressure+Al Quran recitation					Kontrol						
	n	*Mean*	SD	*Min*	*Max*	n	*Mean*	SD	*Min*	*Max*	n	*Mean*	SD	*Min*	*Max*	n	*Mean*	SD	*Min*	*Max*	*p*	
Age (year)	10	52	12.6	34	65	10	46	11.2	30	65	10	44	13.1	27	69	10	44	13.1	27	69	0.428	*
HD Duration (month)	10	28	12.9	12	60	10	23	11.6	12	48	10	33	19.4	12	60	10	33	19.4	12	60	0.417	*
Anxiety Score (HARS) Pre	10	24	2.4	20	27	10	23	1.6	21	25	10	23	2.1	21	27	10	23	2.1	21	27	0.703	*
Family support	10	13	3.0	10	19	10	13	1.8	9	15	10	13	2.0	10	16	10	13	2.0	10	16	0.950	*
Education:																						
Elementary	1	16.7%				1	16.7%				3	50.0%				1	16.7%				0.763	**
Junior School	1	20.0%				2	40.0%				1	20.0%				1	20.0%					
High School	7	36.8%				3	15.8%				4	21.1%				5	26.3%					
University	1	10.0%				4	40.0%				2	20.0%				3	30.0%					
Gender:																						
Male	5	25.0%				7	35.0%				4	20.0%				4	20.0%				0.494	***
Female	5	25.0%				3	15.0%				6	30.0%				6	30.0%					

**One Way Anova, **Fisher, ***Chi Square*

Table 2 presents the results of the homogeneity test for sample characteristics between the treatment and control groups. The analysis was conducted using One-Way ANOVA for continuous variables, while Fisher's Exact Test and Chi-Square Test were applied for categorical data. The results indicate that all sample characteristics between the treatment and control groups are homogeneous (comparable). This finding confirms that the randomization process was successful, ensuring that the characteristics of the treatment and control groups are comparable ($p > 0.05$).

Tabel 3. Normality Test

Variabel	Perlakuan	*Shapiro-Wilk*		
		Statistic	**df**	***p***
Age (Year)	Acupressure	0.81	10	0.020
	Al Quran recitation	0.96	10	0.801
	Acupressure+Al Quran recitation	0.95	10	0.713
	Kontrol	0.88	10	0.136
Anxiety score *pre*	Acupressure	0.92	10	0.380
	Al Quran recitation	0.88	10	0.145
	Acupressure+Al Quran recitation	0.87	10	0.095
	Kontrol	0.85	10	0.061
Anxiety score *post*	Acupressure	0.91	10	0.311
	Al Quran recitationMurottal	0.94	10	0.573
	Acupressure+Al Quran recitation	0.92	10	0.393
	Kontrol	0.91	10	0.300
Family Support Score	Acupressure	0.89	10	0.164
	Al Quran recitation	0.90	10	0.203
	Acupressure+Al Quran recitation	0.95	10	0.665
	Kontrol	0.91	10	0.267

Table 3 presents the analysis results of the characteristic data, including age, pretest anxiety scores, posttest anxiety scores, and family support scores, which follow a normal distribution ($p > 0.050$), except for the age data in the acupressure group ($p = 0.020$). According to Box, as cited by Ghozali (2021) the comparison of means between groups can still be considered reliable (robust), even if the data in each group does not fully follow a normal distribution. Therefore, the age comparison analysis between treatment groups in this study was still conducted using the One-Way ANOVA test.

Tabel 4. Analysis of the Effect of Intervention on the Treatment and Control Groups on Anxiety in CKD Patients

Anxiety Levels	Groups				*p***
	Acupressure	**Al Quran recitation**	**Acupressure + Al Quran recitation**	**Control**	
	Mean ± SD	***Mean ± SD***	***Mean ± SD***	***Mean ± SD***	
Pretest	24,00 ± 2,404	23,10 ± 1,595	23,0 ± 2,108	23,5 ± 2,173	0,703
Posttest	15,40 ± 1,776	14,40 ± 1,897	14,0 ± 2,160	20,20 ± 2,821	0,000

Delta	8,6±3,239	8,7±2,869	9,0±3,399	3,3±2,129	0,001
*p-value**	0,000	0,000	0,000	0,009	

**Paired T-test **Oneway Anova*

Table 4. shows a significant reduction in anxiety levels among CKD patients before and after the intervention. The post-test anxiety scores differed significantly across treatment groups (p = 0.000), with the combination of acupressure and Quranic recitation (murottal) resulting in the lowest anxiety score of 14.0. The difference (delta) in anxiety scores between the pre-test and post-test also varied among treatment groups (p = 0.001), with the combination of acupressure and murottal producing the greatest reduction of 9.0, compared to the control group, which only showed a decrease of 3.3.

Table 5. Effect of Intervention on the Treatment Group's Anxiety After Controlling for Confounding Variables

Intervention	*Mean* Anxiety Score*	*Mean Different (MD)*	SE	t**	*p*	*95% Confidence Interval for Difference*			
						Lower Bound	*Upper Bound*	*Effectiv ness*	*Effect Size*
Acupressure	15.3	-5.0	1.0	-4.9	0.000	-7.0	-2.9	44%	-0.15
Al Quran recitation	14.5	-5.7	1.0	-5.5	0.000	-7.8	-3.6	49%	-0.03
Acupressure+ Al Quran recitation	14	-6.2	1.1	-5.7	0.000	-8.4	-4.0	51%	0.03
Kontrol	20.2	0.0							

**Covariates appearing in the model are evaluated at the following values: Age = 48,125, Gender = 1,50, Educations = 2,83, Family Support Score = 12,85, Axiety Score pre= 23,40*

*** General Linear Model (GLM)*

Table 5 presents the results of the General Linear Model analysis while controlling for confounding variables. The analysis indicates that the acupressure group experienced a reduction in anxiety scores by 5.0 points lower than the control group, and this reduction was statistically significant (MD: 5.0; 95% CI: -7.0 to -2.9; p=0.000). Similarly, the Al Quran recitation group showed a decrease in anxiety scores by 5.7 points compared to the control group, which was also statistically significant (MD: 5.7; 95% CI: -7.8 to -3.6; p=0.000). Furthermore, the combination of acupressure and Al Quran recitation resulted in the largest reduction in anxiety scores by 6.2 points compared to the control group, with statistical significance (MD: 6.2; 95% CI: -8.4 to -4.0; p=0.000).

Table 6. Comparison of Mean Anxiety Scores Among Treatment Groups

(I) Groups	(J) Groups	*Mean Difference (I-J)**	*Std. Error*	p**	*95% Confidence Interval for Difference*	
					Lower Bound	*Upper Bound*
Acupressure	Al Quran recitation	0.4	0.52	0.479	-0.7	1.4
	Acupressure+ Al Quran recitation	0.6	0.55	0.259	-0.5	1.8
Al Quran recitation	Acupressure+ Al Quran recitation	0.3	0.53	0.629	-0.8	1.3

*anxiety Score **LSD *(Least Significant Different)*

Table 6 presents the results of the LSD (Least Significant Difference) post-hoc test. The analysis indicates that there are no significant differences among the treatment groups in reducing anxiety. The reduction in anxiety between the acupressure and Al Quran recitation groups was not statistically significant (p=0.479). Similarly, no significant differences were observed in the comparison between the acupressure group and the combination of acupressure and Al Quran recitation (p=0.259), as well as between the murrotal group and the combination group (p=0.629).

Discussion

Effect of Acupressure Intervention on Anxiety in Chronic Kidney Disease (CKD) Patients Undergoing Hemodialysis

The analysis showed that acupressure significantly reduced anxiety levels in the treatment group. Anxiety scores before and after acupressure at KI-1, LI-4, and EX-3 points (each for 3 minutes) demonstrated statistically significant differences. Administered one day before hemodialysis, twice a week for six weeks, acupressure effectively lowered anxiety scores from 23.4 to 15.3.

Previous studies, including those by Suandika et al. (2023) confirmed the effectiveness of acupressure in reducing anxiety and depression in End-Stage Renal Disease (ESRD) patients undergoing hemodialysis. Acupressure independently and significantly alleviates anxiety and depression in this population.

Research also indicates that anxiety in chronic illness patients is linked to neurotransmitter imbalances, particularly in the limbic system, where hyperactivity in the amygdala and dysfunction in the prefrontal cortex (PFC) heighten anxiety. Serotonin, which regulates amygdala activity, plays a crucial role in anxiety management (Liu et al., 2022).

Anxiety in CKD patients often manifests as sleep disturbances. Observations revealed that hemodialysis patients experienced sleep disruptions in the first week before acupressure treatment. Studies by Han et al. and Kim highlight the link between aging, sleep disorders, and increased anxiety, particularly in CKD patients. Older individuals are more prone to sleep disturbances, which exacerbate anxiety (Haider et al., 2024).

The hippocampus is crucial in threat recognition, and impaired communication between the hippocampus and PFC worsens anxiety. Psychological factors like worry and rumination, along with HPA-axis activation and cortisol release, further contribute to stress responses, causing physical symptoms such as rapid heartbeat and disrupted sleep.

Acupressure points, often termed "gates of energy," help balance vital energy (Qi). Stimulation of these points activates nerve receptors, triggering signals to the pons, midbrain (periaqueductal gray), and hypothalamus, leading to endorphin release and serotonin regulation. This process aids in mood stabilization, stress reduction, and pain relief.

Open Access: http://ejournal.poltekkesjakarta1.ac.id/index.php/adm
Email: jurnalquality@poltekkesjakarta1.ac.id

This study demonstrated the significant impact of acupressure on anxiety reduction ($p<0.001$). By restoring Qi balance, acupressure helps alleviate anxiety symptoms in CKD patients, who often present with weakness, pale and cold skin, and heightened stress. Managing anxiety in this population is crucial, as it can worsen conditions like anemia, hypertension, and weight loss.

The Effect of Al Quran Recitation Intervention on Anxiety in Chronic Kidney Disease (CKD) Patients Undergoing Hemodialysis

Analysis results indicate that Al Quran recitation intervention significantly reduces anxiety levels in the treatment group. A comparison of anxiety scores before and after listening to Surah Ar-Rahman for 15 minutes showed a statistically significant decrease. Patients who listened to Al Quran recitation the day before hemodialysis, twice a week for six weeks, experienced a reduction in anxiety scores from 23.4 to 14.5.

Research by Haider et al. (2024). highlights that CKD patients undergoing hemodialysis experience psychological challenges such as fear of treatment, uncertainty about recovery, and anxiety about their roles and responsibilities. These patients may also face emotional distress, anger, and physical changes like weight loss, edema, nausea, insomnia, fatigue, and shortness of breath. Socially, they often experience reduced interaction and decreased participation in daily activities. Spiritual support encourages patients to seek comfort in faith, fostering resilience and acceptance.

Chronic illness often leads to feelings of isolation, particularly among those experiencing physical limitations. CKD patients undergoing hemodialysis frequently struggle with mobility and family roles, leading to increased anxiety. This condition reduces their social engagement and self-perception, further intensifying their distress. Spiritual support can improve adherence to treatment, enhance physical function, boost self-confidence, and alleviate anxiety.

Patients undergoing hemodialysis twice a week often face psychological distress, including despair and fear of being abandoned by family. Hospital treatment primarily addresses medical needs, often neglecting the psychological impact of chronic illness. Accepting lifelong hemodialysis is challenging, contributing to ongoing anxiety and worsening physical and mental health. Humans have physiological and psychological needs, with spiritual well-being playing a crucial role in creating a sense of security and happiness.

Al Quran recitation provides auditory stimulation that influences brain activity. Sound waves transmitted through the middle ear reach the auditory cortex in the temporal lobe, where they are processed. This stimulation affects the amygdala, hypothalamus, and prefrontal cortex, triggering the release of endorphins, which promote relaxation and emotional well-being (Al-Jubouri et al., 2021).

Effective spiritual coping helps individuals manage stress, fostering emotional stability and reducing anxiety. Hemodialysis patients with strong spiritual coping mechanisms can regulate emotional responses to both internal and external stressors (Supriyadi, 2022).

This study involved CKD patients undergoing hemodialysis who listened to Al Quran recitation for 15 minutes, twice a week for six weeks. The results demonstrated a 49% reduction in anxiety. Babamohamadi et al. also found that Al Quran recitation effectively lowers anxiety in CKD patients. Listening to the Quran stimulates alpha brain waves, enhances endorphin production, and increases stress tolerance, promoting relaxation and emotional stability. Other studies support Al Quran recitation as an effective non-pharmacological therapy for anxiety management. Al Jubouri et al. compared its effects with music and found that Al Quran recitation had a more significant anxiety-reducing impact.

Effect of Combined Acupressure and Al Quran recitation Intervention on Anxiety in Chronic Kidney Disease (CKD) Patients Undergoing Hemodialysis

The study found that combining acupressure with Al Quran recitation (Surah Ar-Rahman) significantly reduced anxiety levels in CKD patients undergoing hemodialysis. Anxiety scores decreased from 23.4 to 14.0 after six weeks of intervention, conducted twice weekly before hemodialysis.

Hemodialysis patients often experience anxiety and fear, particularly regarding health deterioration and dependence on family support.

Open Access: http://ejournal.poltekkesjakarta1.ac.id/index.php/adm
Email: jurnalquality@poltekkesjakarta1.ac.id

Family support plays a crucial role in reducing anxiety, improving self-esteem, and fostering emotional well-being.

Al Quran recitation acts as an auditory intervention that stimulates brain activity, triggering relaxation through the auditory cortex, amygdala, and hypothalamus. This process leads to endorphin release, reducing stress and promoting emotional stability. The rhythmic and melodic characteristics of Al Quran recitation contribute to its calming effect, enhancing spiritual awareness and patient resilience (Al-Jubouri et al., 2021).

Acupressure, a complementary therapy, also effectively reduces anxiety by stimulating specific acupoints that regulate the hypothalamic-pituitary-adrenal (HPA) axis. This stimulation lowers cortisol levels while increasing endorphins and serotonin, inducing relaxation and emotional balance. The technique restores energy flow (Yin-Yang balance) and improves physiological responses, including respiration and stress modulation (Liu et al., 2022).

The combination of acupressure and Al Quran recitation enhances emotional regulation, increases positive neurotransmitters (melatonin, serotonin, and β-endorphins), and reduces stress-related hormones (norepinephrine and cortisol). This integrative approach proved more effective in anxiety reduction than either intervention alone. Studies, including those by Hajiri et al., confirmed its significant impact (p=0.000), with combined interventions showing up to 95% efficacy in reducing anxiety.

Effect of Standard Treatment (Hospital Procedure Compliance) on Anxiety in Chronic Kidney Disease (CKD) Patients Undergoing Hemodialysis

Analysis shows that following hospital-standard procedures reduces anxiety in CKD patients undergoing hemodialysis, with scores decreasing from 23.5 to 20.2. Anxiety can manifest unpredictably during dialysis, sometimes leading to panic disorder, PTSD, or GAD (Cohen et al., 2016). Clinical evaluation of anxiety is essential at dialysis initiation, during psychological assessments, significant life stressors, or drastic health changes. If diagnosed, depression and suicide risk should also be assessed.

Hemodialysis patients often experience pre-treatment anxiety due to physical discomfort, fear of complications, and prior experiences. Standard hospital procedures, including education, anxiolytics, and counseling, help alleviate anxiety. Patients receiving adequate education about dialysis experience less anxiety than those with insufficient information.

Pharmacological management is crucial in treating anxiety in CKD patients. At Pidie Jaya General Hospital, anxiolytic therapy includes Chlorpromazine (CPZ) at 50 mg, administered 2–4 hours before hemodialysis, tailored to patient needs. CPZ blocks dopamine receptors, helping reduce psychotic symptoms. However, only hospitalized patients with severe anxiety typically receive anxiolytics. Challenges include side effects, dependency risks, and the need for individualized treatment adjustments.

Wilson & Stein (2019) discuss pharmacological approaches for anxiety disorders, highlighting their impact on functional impairment and suicide risk. First-line treatments include SSRIs and SNRIs due to their efficacy and safety, though responses vary, necessitating alternative or adjunct therapies.

While hospital-standard procedures help reduce anxiety, they are not always effective. Long-term pharmacotherapy risks dependency, requiring careful monitoring of dosage, side effects, and drug interactions. An individualized approach and interdisciplinary collaboration are essential for managing complex cases effectively.

Comparison of Anxiety Reduction Between Combined and Single-Intervention Groups

Statistical analysis found no significant difference in anxiety reduction between the combined intervention (acupressure and Quranic recitation) and single-intervention groups. However, a significant difference was observed when comparing intervention groups with the control group receiving only standard hospital procedures.

The combined intervention showed greater anxiety reduction in CKD patients undergoing hemodialysis. These patients often experience anxiety due to repetitive procedures and complex health conditions. A holistic approach combining physical stimulation (acupressure) and spiritual therapy (Quranic recitation) offers more significant benefits.

Open Access: http://ejournal.poltekkesjakarta1.ac.id/index.php/adm
Email: jurnalquality@poltekkesjakarta1.ac.id

Hajiri et al (2019) found that combining acupressure and Quranic recitation significantly reduced anxiety compared to other interventions. Acupressure stimulates specific body points, promoting endorphin release and relaxation, while Quranic recitation induces a calming effect by lowering heart rate and blood pressure.

The combination of acupressure and Quranic recitation stimulates the hypothalamus, promoting neuropeptide production and reducing stress hormones like cortisol, epinephrine, norepinephrine, and dopamine. This dual approach enhances both physical and spiritual well-being (Komariah et al., 2021).

Least Significant Difference (LSD) analysis found no major difference in anxiety reduction between acupressure and Quranic recitation groups (MD: 0.4; 95% CI: -0.7 to 1.4; p=0.479) or between single and combined interventions. Acupressure increases serotonin and endorphin production, reducing cortisol levels and fostering relaxation. It affects biochemical, physiological, and perceptual changes, enhancing comfort. Audio-based spiritual therapy, like Quranic recitation, provides a therapeutic distraction, boosting endorphin production and reducing stress hormone levels.

Fasihulisan et al (2024) study on cardiac patients found no significant differences in anxiety levels or vital signs among acupressure, Quranic recitation, or their combination. Therefore, for efficiency and cultural considerations, Muslim patients may benefit from Quranic recitation, while non-Muslim patients can use acupressure.

Conclusions and Recommendations

The combination of acupressure and Quranic recitation is effective in reducing anxiety among CKD patients undergoing hemodialysis. Both interventions, whether applied individually or in combination, significantly lower anxiety levels, with the combined therapy showing the greatest reduction. However, no substantial difference was observed between the combined and single interventions. These findings support the use of acupressure and Quranic recitation as complementary nursing therapies. It is recommended that Quranic recitation be prioritized for Muslim patients, while acupressure may be applied across patient groups regardless of religious background, in accordance with patient needs and preferences.

References

Abensur Vuillaume, L., Gentilhomme, C., Weber, S., Ouamara, N., Bayard, J., Valla, M., Khalife, K., Goetz, C., & Guler, N. (2022). Effectiveness of Hypnosis for The Prevention of Anxiety During Coronary Angiography (HYPCOR study): A Prospective Randomized Study. *BMC Complementary Medicine and Therapies*, *22*(1), 315. https://doi.org/https://doi.org/10.1186/s12906-022-03792-x

Al-Jubouri, M. B. A., Isam, S. R., Hussein, S. M., & Machuca-Contreras, F. (2021). Recitation of Quran and Music to Reduce Chemotherapy-Induced Anxiety Among Adult Patients With Cancer: A Clinical Trial. *Nursing Open*, *8*(4), 1606–1614. https://doi.org/https://doi.org/10.1002/nop2.781

Anisah, I. N., & Maliya, A. (2021). Efektivitas Relaksasi Benson Terhadap Kecemasan Pasien Yang Menjalani Hemodialisa. *Jurnal Berita Ilmu Keperawatan*, *14*(1), 57–64. https://doi.org/https://doi.org/10.23917/bik.v14i1.12226

Bello, A. K., Okpechi, I. G., Osman, M. A., Cho, Y., Htay, H., Jha, V., Wainstein, M., & Johnson, D. W. (2022). Epidemiology of Haemodialysis Outcomes. *Nature Reviews Nephrology*, *18*(6), 378–395. https://doi.org/https://doi.org/10.1038/s41581-022-00542-7

Centre for Disease Control (CDC). (2023). *Chronic Kidney Disease Initiative: CKD Risk Factors*.

Cho, Y., Joo, J.-M., Kim, S., & Sok, S. (2021). Effects of Meridian Acupressure on Stress, Fatigue, Anxiety, and Self-Efficacy of Shiftwork Nurses in South Korea. *International Journal of Environmental Research and Public Health*, *18*(8). https://doi.org/https://doi.org/10.3390/ijerph18084199

Cohen, S. D., Cukor, D., & Kimmel, P. L. (2016). Anxiety in Patients Treated with Hemodialysis. *Clinical Journal of the American Society of Nephrology : CJASN*, *11*(12), 2250–2255.

https://doi.org/https://doi.org/10.2215/cjn.02590316

Elezi, B., Abazaj, E., Zappacosta, B., & Hoxha, M. (2023). Anxiety and depression in geriatric hemodialysis patients: factors that influence the border of diseases. *Frontiers in Psychology*, *14*(November), 1–10. https://doi.org/https://doi.org/10.3389/fpsyg.2023.1281878

Emilia, N., Arafat, R., & Sjattar, E. (2020). Analisis Faktor Yang Mempengaruhi Kecemasan Pada Pasien Hemodialisis: Literatur Review. *Jurnal Keperawatan Muhammadiyah*, *5*. https://doi.org/https://doi.org/10.30651/jkm.v5i2.4939

Fasihulisan, F., Mamlukah, M., Wahyuniar, L., & Iswarawanti, D. N. (2024). Pengaruh Pemberian Terapi Murattal Al-Qur'an dan Akupresur Terhadap Kecemasan dan Tanda-tanda Vital Pasien Penyakit Jantung di RSUD dr. Soekardjo Kota Tasikmalaya. *Journal of Midwifery Care*, *4*(2), 87–95.

Gadia, P., Awasthi, A., Jain, S., & Koolwal, G. D. (2020). Depression and Anxiety in Patients of Chronic Kidney Disease Undergoing Haemodialysis: A Study From Western Rajasthan. *Journal of Family Medicine and Primary Care*, *9*(8), 4282–4286. https://doi.org/https://doi.org/10.4103/jfmpc.jfmpc_840_20

Ghozali, I. (2021). *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 26* (10th ed.). Badan Penerbit Universitas Diponegoro.

Global Burden of Disease Study. (2022). *Cronic Kidney Disease A "Global Killer in Pain Sight."*

Haghshenas, M., Assarian, F., Omidi, A., Razaghof, M., & Rahimi, H. (2019). Efficacy of Mindfulness-based Stress Reduction in Hemodialysis Patients With Anxiety and Depression: A Randomized, Double-blind, Parallel-group Trial. *Electronic Physician*, *11*, 7370–7377. https://doi.org/http://dx.doi.org/10.19082/7370

Haider, A. S., Unbrin, A., & Shahzadi, M. (2024). Prevalence of Depression, Anxiety, Stress, and Quality of Life among Individuals with Hemodialysis. *Pakistan Journal of Health Sciences*, 253–258. https://doi.org/https://doi.org/10.54393/pjhs.v5i08.1856

Hajiri, F., Pujiastuti, S. E., & Siswanto, J. (2019). Terapi Murottal dengan Akupresur terhadap Tingkat Kecemasan dan Kadar Gula Darah pada Pasien dengan Penyakit Jantung Koroner. *Jurnal Keperawatan Silampari*, *2*(2), 146–159. https://doi.org/https://doi.org/10.31539/jks.v2i2.507

Hibatullah, F. (2023). *Pengaruh Akupresur dan Terapi Murottal Terhadap Fatigue pada Pasien Cronic Kidney Disease (CKD) yang Menjalani Hemodialisis*.

Hmwe, N. T. T., Subramanian, P., Tan, L. P., & Chong, W. K. (2015). The Effects of Acupressure on Depression, Anxiety and Stress in Patients with Hemodialysis: A Randomized Controlled Trial. *International Journal of Nursing Studies*, *52*(2), 509–518. https://doi.org/https://doi.org/10.1016/j.ijnurstu.2014.11.002

Huang, C. W., Wee, P. H., Low, L. L., Koong, Y. L. A., Htay, H., Fan, Q., Foo, W. Y. M., & Seng, J. J. B. (2021). Prevalence and Risk Factors for Elevated Anxiety Symptoms and Anxiety Disorders in Chronic Kidney Disease: A systematic Review and Meta-analysis. *General Hospital Psychiatry*, *69*, 27–40. https://doi.org/https://doi.org/10.1016/j.genhosppsych.2020.12.003

İnci, S., & Çetinkaya, F. (2023). Effect of Aromatherapy on The Anxiety of Patients Before Coronary Angiography. *Explore (New York, N.Y.)*, *19*(2), 203–208. https://doi.org/https://doi.org/10.1016/j.explore.2022.04.006

Kocak, M. Y., Göçen, N. N., & Akin, B. (2022). The Effect of Listening to the Recitation of the Surah Al-Inshirah on Labor Pain, Anxiety and Comfort in Muslim Women: A Randomized Controlled Study. *Journal of Religion and Health*, *61*(4), 2945–2959. https://doi.org/https://doi.org/10.1007/s10943-021-01356-w

Komariah, M., Mulyana, A. M., Maulana, S., Rachmah, A. D., & Nuraeni, F. (2021). Literature Review Terkait Manfaat Terapi Akupresur Dalam Mengatasi Berbagai Masalah Kesehatan. *Jurnal Medika Hutama*,

2(04), 1–5.

Kovesdy, C. P. (2022). Epidemiology of Chronic Kidney Disease: An Update 2022. *Kidney International Supplements*, *12*(1), 7–11. https://doi.org/https://doi.org/10.1016/j.kisu.2021.11.003

Liu, X., Wang, X., Ma, H., & Zhang, W. (2022). Mechanisms Underlying Acupuncture Therapy in Chronic Kidney Disease: A Narrative Overview of Preclinical Studies and Clinical Trials. *Frontiers in Nephrology*, *2*. https://doi.org/https://doi.org/10.3389/fneph.2022.1006506

Marthoenis, M., Syukri, M., Abdullah, A., Tandi, T. M. R., Putra, N., Laura, H., Setiawan, A., Sofyan, H., & Schouler-Ocak, M. (2021). Quality of Life, Depression, and Anxiety of Patients Undergoing Hemodialysis: Significant Role of Acceptance of The Illness. *International Journal of Psychiatry in Medicine*, *56*(1), 40–50. https://doi.org/https://doi.org/10.1177/0091217420913382

Mosleh, H., Alenezi, M., Al Johani, S., Alsani, A., Fairaq, G., & Bedaiwi, R. (2020). Prevalence and Factors of Anxiety and Depression in Chronic Kidney Disease Patients Undergoing Hemodialysis: A Cross-sectional Single-Center Study in Saudi Arabia. *Cureus*, *12*(1), e6668. https://doi.org/https://doi.org/10.7759/cureus.6668

Nipa, N., Hapsah, H., & Majid, A. (2021). Deep Breathing Relaxation Exercise for Reducing Anxiety of Patients Under Hemodialysis Treatment. *Enfermería Clínica*, *31*, S793–S796. https://doi.org/https://doi.org/10.1016/j.enfcli.2021.07.032

Riset Kesehatan Dasar (Riskesdas). (2018). *Laporan Riskesdas 2018 Nasional*.

Robbert W, S., Gertrud L, H., Wim L, L., Prataap K. Chandie, S., Ittersum, F. J. van, Smets, Y. F. C., Vleming, L.-J., Dekker, F. W., Honig, A., & Siegert, C. E. H. (2019). *Anxiety Symptoms, Mortality, and Hospitalization in Patients Receiving Maintenance Dialysis: A Cohort Study*. https://doi.org/https://doi.org/10.1053/j.ajkd.2019.02.017

Satyanarayana R. Vaidya; Narothama R. Aeddula. (2022). Cronic Renal Failure. *National Library of Medicine*.

Suandika, M., Chen, S.-Y., Fang, J.-T., Yang, S.-H., Tsai, Y.-F., Weng, L.-C., Tsay, P.-K., & Tang, W.-R. (2023). Effect of Acupressure on Fatigue in Hemodialysis Patients: A Single-Blinded Randomized Controlled Trial. *Journal of Integrative and Complementary Medicine*, *29*(2), 111–118. https://doi.org/https://doi.org/10.1089/jicm.2022.0644

Supriyadi. (2022). Validity Test of The Acupressure Model Integrated Spiritual Coping Skill as an Effort to Reduce Anxiety Level in Chronic Kidney Disease. *Genius Journal*, *3*(2), 187–195. https://doi.org/https://doi.org/10.56359/gj.v3i2.34

Susanti, W. H., Utariani, A., & Rahardjo, E. (2019). The Effect Of murottal Al- Quran Therapy On Anxiety Level According To Hamilton Anxiety Rating Scale (HARS) in Patient Receiving Subarachnoidblock Anesthesia. *International Journal of Science and Research (IJSR)*, *8*(9), 867–870.

Wilson, A. J., & Stein, D. J. (2019). Pharmacological Treatment of Anxiety Disorders. In *APA handbook of psychopharmacology.* (pp. 195–215). American Psychological Association.