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Application of mind-body therapies on anxiety and quality of life in patients undergoing hemodialysis: A systematic review

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Abstract

Background: Chronic kidney disease is one of the global public health challenges that continues to increase with a significant impact on morbidity, mortality and high health care costs. Hemodialysis, one of the renal replacement therapy methods, often causes anxiety and decreased quality of life. *Mind body therapies* such as *guided imagery,* yoga and meditation have the potential to reduce anxiety and improve the quality of life of patients undergoing hemodialysis.
Purpose: To evaluate the effectiveness application of *mind body therapies* on anxiety and quality of life in patients undergoing hemodialysis.
Method: This systematic review uses an approach that follows the PRISMA guidelines. Searches were conducted in six electronic databases, namely Scopus, Springerlink, Proquest, EBSCO, Science Direct and Pubmed with appropriate keywords. The included articles were published within the last 10 years, in English and the type of research was RCT or quasi-experimental. After the selection process, 10 articles met the criteria for further analysis.
Results: Eight articles were RCT designs and two articles were quasi-experimental designs. The application of *mind body therapies* including *guided imagery*, yoga and meditation is a complementary therapy that can reduce anxiety and improve quality of life. In addition, it also affects the improvement of sleep quality, reduces depression, reduces stress levels and emotional regulation in patients undergoing hemodialysis.
Conclusion: *Mind body therapies* have been proven effective in reducing anxiety and improving the quality of life of hemodialysis patients. This therapy can be used both during hemodialysis sessions and when done alone at home. With its various benefits, this therapy has the potential to be integrated into holistic and evidence-based patient care.

Keywords: Anxiety; Hemodialysis Patients; *Mind Body Therapies*; Quality of Life.

INTRODUCTION

One of the global public health problems is chronic kidney disease which continues to increase with a significant impact on morbidity and high health care costs (Bello, Okpechi, Osman, Cho, Htay, Jha, Wainstein, & Johnson, 2022). Stage 5 chronic kidney disease is also known as terminal renal failure, characterized by the need for patients to undergo maintenance dialysis to survive. When kidney function drops below 10-15% of normal, dialysis or transplantation becomes necessary for survival (Babakhani, Rahzani, Hekmatpou, & Sheykh, 2024). In 2018, there were 131,636 patients with terminal renal failure and an increase of 2.3% from 2017. In 2018, the number of patients with terminal renal failure undergoing hemodialysis ranged from 111,000 to 113,000 people for four consecutive years (United States Renal Data System, 2021). In Indonesia itself, the number of end-stage chronic kidney failure in

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2018 reached 713,783 people (Ministry of Health of the Republic of Indonesia, 2018).

Hemodialysis is one of the main treatment modalities for kidney failure patients that can help remove accumulated waste products as well as remove toxins that cause *irreversible kidney injury* (Alshammari, Alkubati, Alrasheeday, Pasay-An, Edison, Madkhali, Al-Sadi, Altamimi, Alshammari, Alshammari, & Alshammari, 2024). Hemodialysis is a form of dialysis that performs dialysis functions directly through the bloodstream. Hemodialysis is an extracorporeal therapy that is performed outside the body, removing blood from the body to perform the dialysis process and then returning the blood to the patient's body (Thomas & Noble, 2024). When hemodialysis begins, blood and dialysate (dialysis solution) flow in opposite directions across a closed semipermeable membrane. The dialysate contains a balanced mixture of electrolytes and water that closely resembles human plasma. During hemodialysis waste products move from the blood to the dialysate due to differences in concentration (diffusion). Some water is also removed from the blood into the dialysate by osmosis. Electrolytes can move in either direction, as needed and carry with them some fluid. Potassium and sodium usually move from the plasma to the dialysate, bicarbonate and calcium generally move from the dialysate to the plasma. This circulation process continues for a predetermined period of time, removing nitrogenous waste, restoring fluid and electrolyte balance, and restoring acid-base balance (Ignatavicius, Workman, Rebar, & Heimgartner, 2020).

Hemodialysis is a stressful condition that is usually associated with various psychosocial problems and even mental disorders. Anxiety is one of the most common mental health problems faced by hemodialysis patients. Anxiety is the most important reaction to the disease and can negatively impact the patient's quality of life (Mohsenzadeh et al., 2018). The level of anxiety in hemodialysis patients has also been reported to be high, ranging from 30% to 50% (Yoong, Mooppil, Khoo, Newman, Lee, Kang, & Griva, 2017). Safe and inexpensive complementary and alternative therapies have received great attention to overcome this problem (Beizaee, Rejeh, Heravi-Karimooi, Tadrisi, Griffiths, & Vaismoradi, 2018).

Mind body therapies such as *guided imagery* , yoga, *meditation* are often cited as ways to slow cognitive decline, improve brain health and improve negative psychological symptoms (Jain, Lenze, & Lavretsky, 2023). *Guided imagery* is a mind body practice that involves visualizing events, experiences and behaviors using emotions and all five senses (Giacobbi, Loughman, Brink, Shawley-Brzoska, & Misra, 2023). *Guided imagery* is a complementary intervention that has been used for a long time. *Guided imagery* has many effects, including relaxation, stress reduction, anxiety reduction, immune system enhancement, sleep quality and overall well-being. *Guided imagery* combines five main steps: assessing the problem, establishing a relaxed body position, using a focused breathing pattern, establishing a positive imagination environment and starting the journey. As science and research advances, *Guided imagery* is increasingly understood and has been used in practice with positive outcomes for patients (Krau, 2020).

Chronic hemodialysis patients suffer from many physical and psychological disorders associated with hemodialysis. Yoga is one of the interventions that can improve outcomes in comorbid diseases (KauricKlein, 2019) . Yoga uses breathing, postures and meditation to help the mind and engage the body in low to moderate physical activity. Studies have found that yoga can benefit patients with chronic diseases by improving quality of life, cardiovascular risk factors, physical function and mood disorders (Birdee, Rothman, Sohl, Wertenbaker, Wheeler, Bossart, Balasire, & Ikizler, 2015) . While *mindfulness meditation* is a psychological coping resource that can relieve stress and related physical, psychological and social reactions that threaten quality of life. The developed capacity for awareness allows patients to accept the hemodialysis experience which is very burdensome for them and an unpleasant experience. This allows patients to be aware of their responses to their senses, emotions and thoughts which allows for effective self-management and problem-solving skills (Alhawatmeh, Alshammari, & Rababah, 2022).

Systematic review aims to evaluate whether *mind body therapies* are effective in reducing anxiety and improving quality of life in hemodialysis patients. In addition, it provides evidence that can support the use of this method as part of comprehensive care for hemodialysis patients.

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RESEARCH METHOD

This type of study uses a *systematic review approach* with 6 electronic databases, namely scopus, springerlink, proquest, EBSCO, science direct and pubmed. Literature search using keywords namely (hemodialysis patients OR chronic kidney disease patients) AND (mind body therapies OR guided imagery OR yoga OR mindfulness meditation) AND (anxiety OR quality of life).

The inclusion criteria are research articles published in the last 10 years from 2014 to 2024, open access, abstract and full text, research articles, English language and type of research *Randomized Controlled Trial* or quasi-experiment. And the exclusion criteria are literature review articles, systematic review articles and scoping review articles.

The PICO framework in this study focuses on hemodialysis patients as the target population. The intervention being examined is mind-body therapies, while the comparison is made with non-mind-body therapies. The expected outcome of this intervention is a reduction in anxiety and an improvement in the quality of life for hemodialysis patients.

This study uses the PRISMA guidelines used to guide authors in identifying articles relevant to the objectives. The use of keywords in accordance with the Medical Subject Heading (MeSH) can facilitate the filtering process based on the keywords that have been set.

Articles consisting of RCT or Quasi Experimental studies that have been conducted and published in English discuss the evaluation of the effectiveness of the application of *mind body therapies* on anxiety and quality of life in those undergoing hemodialysis. Details of article selection are explained in Figure 1. Finally, 10 articles were included in the study after the selection was carried out.

RESEARCH RESULTS

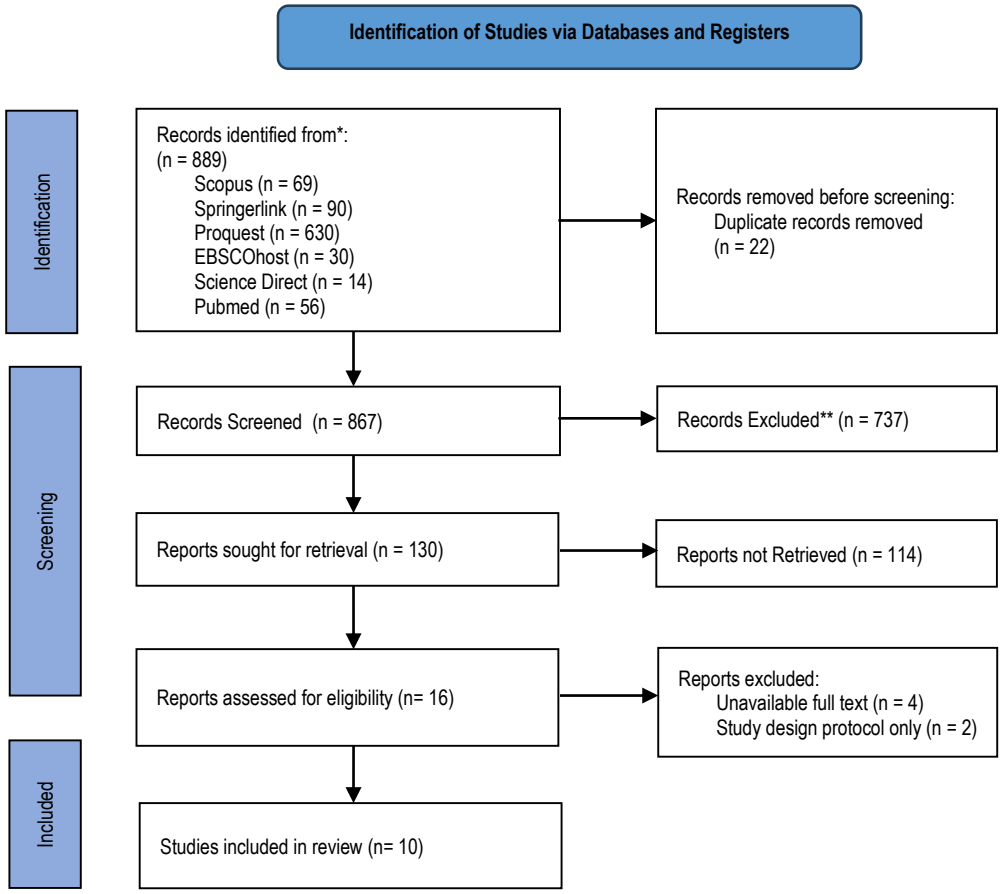


Figure Article Selection Process (PRISMA Guideline)

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Table 1. Brief Description of the Reviewed Articles

(Author, Year) (Country)	Purpose	Method	Results
(Afshar et al., 2018) (Iran)	To determine the effects of *guided imagery* on anxiety status and sleep characteristics and quality among hemodialysis patients.	*Randomized Controlled Trial,* 70 participants (35 intervention, 35 control). Each patient listened to the guided imagery (GI) instructions via Compact Disc for 25 minutes using headphones, every two days for four weeks. Anxiety measured using Spielberger's State Trait Anxiety Inventory and sleep quality with Pittsburgh Sleep Quality Index.	Analysis of variance showed significant differences between groups in post-test anxiety scores (adjusted mean difference: -8.94; 95% CI = -10.26 to -7.57; $p < 0.001$) and sleep quality (adjusted mean difference: -0.877; 95% CI = -1.51 to -0.24; $p < 0.007$). Guided imagery significantly reduces anxiety and improves sleep quality in hemodialysis patients.
(Beizaee et al., 2018) (Iran)	To determine the effect of guided imagery on anxiety, depression, and vital signs in hemodialysis patients.	*Randomized controlled clinical trial,* 80 participants (40 intervention, 40 control). The intervention was conducted three times a week for four weeks. Anxiety and depression measured using Hospital Anxiety and Depression Scale, and vital signs were recorded pre- and post-intervention.	The intervention group showed a significant decrease in anxiety and depression levels compared to the control group ($p=0.030$, $p=0.001$). A statistically significant decrease in respiratory rate and heart rate in the intervention group ($p<0.05$).
(Ozer et al., 2021) (Türkiye)	To evaluate the effects of laughter yoga on plasma beta-endorphin levels, pain levels, and sleep quality of hemodialysis patients.	*Randomized Controlled Trial*, 68 participants (34 intervention, 34 control). Laughter yoga was performed for 30 minutes, totaling 16 sessions, twice a week from July to October 2018. Measured using socio-demographic formulas, visual analog scales, Pittsburgh Sleep Quality Index, and blood samples examined for beta-endorphin levels.	After laughter yoga, the pain levels in the intervention group significantly decreased, and sleep quality improved significantly. No significant changes in beta-endorphin levels. Laughter yoga is effective in reducing pain and improving sleep quality.

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(Author, Year) (Country)	Purpose	Method	Results
(Birdee et al., 2015) (California)	To assess the feasibility and safety of a 12-week intradialysis yoga intervention compared with renal education on increased physical activity.	*Randomized Controlled Trial,* 31 participants (18 yoga, 13 education). Intradialysis yoga was performed three times a week for 12 weeks (each session lasting 30-60 minutes). The educational intervention lasted 12 weeks, where participants completed 30-60 minutes of curriculum during the first two hours of dialysis. Measured using Kidney Disease Quality of Life-36, Functional Assessment of Chronic Illness Fatigue, and Pittsburgh Sleep Quality Index.	Intradialysis yoga is feasible and safe for hemodialysis patients. Participants in the yoga group attended an average of 21 sessions (70% participation rate), while education participants completed an average of 30 sessions (83% participation rate).
(Bennett et al., 2015) (Australia)	Testing the feasibility of laughter yoga for hemodialysis patients, exploring the psychological and physiological impacts of laughter yoga, to calculate the estimated sample size required in the future.	*Quasi experiment,* 17 participants. Laughter yoga was performed for 30 minutes, three times a week for four weeks. Psychological variables measured included quality of life, subjective well-being, mood, optimism, control, self-esteem, depression, anxiety, and stress. Physiological variables included blood pressure, intradialytic hypotension, and lung function.	This study demonstrated the feasibility of performing laughter yoga for hemodialysis patients despite attrition of participants in some evaluation components (e.g., lung function, participant survey). The sample included 10 men (58.8% and 7 women (41.2%), aged 20-89 years (Mean = 68.06, SD = 17.23) and had a mean body mass index of 24.09 (SD = 5.04, range = 17.4-37.2). This intervention recorded a 94% retention rate over four weeks indicating patient acceptability.
(Parekh et al., 2024) (India)	Identifying the effectiveness of yoga and meditation on quality of life in hemodialysis patients	*Quasi-experiment,* 100 participants. Yoga and meditation were conducted three times a week during hemodialysis sessions for 12 weeks. Measured using WHOQoL BREF.	Yoga and meditation significantly improved quality of life in all domains. The mean pre-test quality of life score was 51.57, increasing significantly to 109.4 post-test. The calculated t-test value of 65.070 was compared with the table value of 1.645, with $p < 0.001$.

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(Author, Year) (Country)	Purpose	Method	Results
(Alhawatmeh et al., 2022) (Jordan)	Testing the effect of *mindfulness meditation* on the nature of awareness, perceived stress, quality of life and emotional regulation in hemodialysis patients.	*Randomized Controlled Trial*, 74 participants (37 intervention, 37 control). Meditation was performed for 30 minutes per session, three times a week for five weeks while patients were undergoing hemodialysis. Measured using Mindfulness Scale (MAAS), Perceived Stress Scale (PSS), Emotion Regulation Questionnaire (ERQ), and Kidney Disease Quality of Life Questionnaire (KDQOL-36).	At the end of the intervention, *mindfulness meditation* has significantly reduced the stress felt by the experimental group, according to the results of repeated ANOVA measurements. In addition, it improves emotional management, knowledge and quality of life related to kidney disease. *Mindfulness meditation* can help hemodialysis patients manage stress and improve their quality of life.
(Vaishnav et al., 2022) (India)	Studying the effects of guided meditation on physical, emotional and cognitive dimensions of well-being and quality of life in patients undergoing hemodialysis.	*Randomized Controlled Trial*, 80 participants (40 intervention, 40 control). Guided meditation was conducted for 30 minutes each dialysis session (three times a week) for six weeks. Measured using Kidney Disease Quality of Life (KDQOL), Perceived Stress Scale (PSS), Faces Scale of Happiness, and VAS Scale for Stress.	Both quantitative and qualitative measures of activity level, alertness, awareness. Stability, self-confidence, mental clarity, anger management and self-reflection of the intervention group, perceived stress scale. This improves the burden and impact and overall quality of life scores of kidney disease. *Guided meditation* can be recommended for inclusion in the standard of care for improving the quality of life of patients undergoing hemodialysis.
(Novak et al., 2017) (Canada)	To determine the feasibility and effectiveness of a brief mindfulness meditation intervention for hemodialysis patients with symptoms of depression and anxiety.	*Randomized Controlled Trial*, 41 participants (21 intervention, 20 control). Intervention lasted 8 weeks (10-15 minutes per session, three times a week during hemodialysis). Measured using Patient Health Questionnaire (PHQ-9) and General Anxiety Disorder-7 (GAD-7).	Mindfulness meditation can be performed and tolerated well in patients undergoing hemodialysis with symptoms of anxiety and depression.

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(Author, Year) (Country)	Purpose	Method	Results
(Nassim et al., 2021) (Canada)	To determine the effectiveness of a brief mindfulness intervention compared with an active health promotion program (HEP) in reducing symptoms of depression and anxiety in patients undergoing dialysis.	*Randomized Controlled Trial,* 55 participants (27 intervention, 28 control). Intervention lasted 8 weeks (20-minute sessions per week). Measured using PHQ-9 and GAD-7.	*in Patient Health Questionnaire -9 (PHQ-9)* depression scores with primary analysis in participants with baseline PHQ-9 ≥ 10, and secondary analysis including all participants. Secondary outcome was change in *Generalized Anxiety Disorder-7* (GAD-7) anxiety scores with corresponding primary and secondary analyses. Results: Both BMI and HEP reduced depressive symptoms, with no differences between test groups (PHQ change = -7.0 vs. -6.1, p = 0.62). BMI was more effective than HEP in reducing anxiety (GAD-7 change = -8.7 vs. -1.4, p = 0.01).

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Article critique conducted using JBI Tools that most meet the criteria so that they are analyzed further. There are 8 RCT articles and 2 quasi-experimental articles with a sample of patients undergoing hemodialysis. The interventions carried out were the application of *mind body therapies* (*guided imagery,* yoga and *mindfulness meditation*). Of the 8 RCT articles, 8 articles showed reliable measurement results and all analyses used randomization and no participants were *lost to follow up* and were analyzed according to the initial group. The choice of statistics used was also very appropriate, taken from valid and reliable data. All RCT design articles were suitable for the topics discussed. In these 2 quasi-experimental articles, using a pre-post design without control and follow-up after the intervention is explained but not in detail. Although the results of the measurements before and after the intervention are presented.

The PRISMA guideline flow where the first stage is to identify articles in 6 electronic databases, namely Scopus (69), Springerlink (90), Proquest (630), EBSCOhost (30), Science direct (14), Pubmed (56) so that the total obtained is 889 articles. Then a duplication check was carried out and 22 identical articles were found. After that, the researcher filtered the articles by reading the details of the title and abstract according to the inclusion criteria and 851 were excluded because the title and abstract did not match the topic, were not academic journals, literature reviews, scoping reviews, systematic reviews and meta-analyses. Furthermore, the remaining 16 articles were reviewed again in *full text* and read by the researcher so that articles were excluded because the articles did not answer the research objectives. After that, ten articles were determined to be used in this systematic review.

All studies [1-10] were published between 2014-2024. The studies were conducted in various countries including two (20%) [1, 2] in Iran, one (10%) [3] in Turkey, one (10%) [4] in California, one (10%) [5] in Australia, two (20%) [6, 8] in India, one (10%) [7] in Jordan, two (20%) [9, 10] in Canada. Most of these studies (n=8; 80%) [1-4, 7-10] were randomized controlled trials *and* the rest were quasi-experimental studies [5, 6]. The sample size of these studies ranged from 17 to 616 patients undergoing hemodialysis. The types of *mind body therapies* reviewed in this article were *guided imagery,* yoga and *mindfulness meditation.*

Various instruments are used to assess anxiety and quality of life in patients undergoing hemodialysis. Anxiety measurement instruments use *the Spielberg State Trait Anxiety, Hospital Anxiety and Depression Scale*, ERQ, *Patients Health Questionnaire* (PHQ-9), *General Anxiety Disorder* (GAD-7). While the measurement of quality of life uses *health related quality of life kidney disease*, WHOQoL BREF, KDQoL.

DISCUSSION

Patients undergoing hemodialysis can experience physical and psychological stress and are 1.5-3 times more likely to be hospitalized than other chronic diseases. Mental health problems are common in hemodialysis patients and affect quality of life (Beizaee et al., 2018) .

Based on the results of the search above, a number of studies that evaluate the application of *mind body therapies* such as *guided imagery,* yoga and meditation are included in *Complementary Alternative Medicine (CAM).* Current studies show that users of *Complementary Alternative Medicine* (CAM) have a better quality of life than users non CAM (Dehghan, Namjoo, Bahrami, Tajedini, Shamsaddini-Iori, Zarei, Dehghani, Ranjbar, & Nasab, 2020). This systematic review provides a specific view of the types of *mind body therapies implementation* including type, duration and frequency. The studies consisted of 8 RCTs and 2 quasi-experimental.

Hemodialysis patients experience various forms of anxiety, ranging from situational anxiety due to medical procedures to an individual's tendency to feel anxious in general. Anxiety is one of the most common mental health problems among hemodialysis patients with a prevalence of 31% - 51% (Afshar, Mohsenzadeh, Gilasi, & Sadeghi-Gandomani, 2018). Anxiety is a feeling of fear and worry due to an unclear or vague threat, with manifestations such as palpitations, tremors, digestive system disorders, tingling sensations, nervous feelings, shortness of breath, excessive sweating and fear (Cohen, Cukor, & Kimmel, 2016) . Chronic kidney disease patients often experience anxiety while undergoing hemodialysis therapy. This anxiety is an emotional response to various stressors, both those that can be clearly identified and those that are not specific (Sadock, Auerbach, Rybarczyk, Aggarwal, & Lanoye, 2014) .

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Studies show that *guided imagery* reduces anxiety and sleep quality (Afshar et al., 2018) reduces depression (Beizaee et al., 2018). *Guided imagery* is effective for patients with anxiety and physical limitations because it does not require physical activity. It can be used as a relaxation technique before and during hemodialysis sessions. The positive effect *of guided imagery* on anxiety in this study is that it can help patients avoid focusing on their illness and related negative thoughts and emotions and instead focus on pleasant things such as the beach, the sound of seabirds and ocean waves (Afshar et al., 2018). Patients were asked to take a deep breath through the stomach and diaphragm, then relax the muscles of the body while imagining themselves in a beautiful forest or on the beach. Patients were also invited to listen to the sounds around them and smell the aromas that are usually found in that place (Foji, Tadayonfar, Mohsenpour, & Rakhshani, 2015) . One of the advantages of *guided imagery* is that it is easy to apply because it does not require special equipment and can be done at any time either individually or with audio guidance. And the effectiveness of *guided imagery* is very dependent on the patient's ability to visualize and maintain concentration.

The mechanism of action combines body movements, breathing techniques and meditation to reduce stress and anxiety. Yoga practice can increase the activity of GABA (gamma-aminobutyric acid), a neurotransmitter that plays a role in supporting the function of the human nervous system (Streeter et al., 2010; Kinasih, 2010). GABA functions as an inhibitor that inhibits adverse neurological reactions and responses. Chloride ions are GABA inhibitors. An imbalance in the levels of chloride ions in the blood can reduce GABA levels, which can ultimately trigger prolonged anxiety, irrational fear and the release of other brain hormones without optimal control. Decreased GABA levels can also increase the production of CRH (*Corticotropin Releasing Hormone)* in the paraventricular nucleus of the hypothalamus. The CRH hormone then stimulates the adrenal glands to produce cortisol, a hormone that plays a role in the emergence of negative emotions, feelings of depression and excessive fear (Streeter, Whitfield, Owen, Rein, Karri, Yakhkind, Perlmutter, Prescot, Renshaw, Ciraulo, & Jensen, 2010). Yoga can be done for patients who still have sufficient physical capacity because it involves body activity.

Studies have shown that *mindfulness meditation* can result in shrinking and reducing the size of the amygdala which contributes to reduced stress and anxiety. In addition, *mindfulness meditation* also can increase function and activity in the prefrontal cortex which plays a role in emotional regulation (Alhawatmeh et al., 2022) . Meditation refers to a group of techniques, including mantra meditation and mindfulness meditation, that involve training the mind or inducing some mode of meditation. Meditation is one of the more commonly used mind-body modalities, as it can be easily done alone (Astuti, Sukarmin, & Arovah, 2024). This means that *Mindfulness meditation* can be used to overcome anxiety in hemodialysis patients.

The therapeutic modality for treating end-stage chronic kidney disease is hemodialysis. However, this is associated with various physical, psychological and social challenges that can affect the patient's quality of life (Parekh & Prakasam, 2024). Pharmacological treatment has limitations and side effects, therefore non-pharmacological interventions such as *guided imagery, yoga and mindfulnes meditation* are increasingly used approaches to improve the quality of life of patients.

In *guided imagery,* the brain is activated to imagine an event in a positive and proactive way before one actually experiences the event. In other words, the patient is guided to mentally develop a desired image and focus his or her imagination to feel, see, hear and smell the event as if it were real. This intervention is low-cost, does not require special equipment or extensive education, is an easy-to-administer technique and is not associated with adverse side effects. (Beizaee et al., 2018). Effective for patients with anxiety, depression and difficulty sleeping, and can be used as a relaxation method during hemodialysis sessions to increase comfort.

Laughter yoga is effective in reducing pain and improving sleep quality (Özer & Ateş, 2021), both for psychological and physiological impacts (Bennett, Parsons, Ben-Moshe, Neal, Weinberg, Gilbert, Ockerby, Rawson, Herbu, & Hutchinson, 2015), intradialytic yoga can be applied to hemodialysis patients (Birdee et al., 2015). Yoga balances the autonomic nervous system and reduces heart rate, blood pressure and metabolic rate by reducing sympathetic tone and increasing parasympathetic tone (Dehghan et al., 2020). *Laughter yoga* improves breathing and muscle relaxation, increases pain

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tolerance by increasing the release of endorphins which are natural painkillers in the body creating feelings of happiness, improves cognitive function by reducing stress hormone levels, reducing depression, improving sleep quality (Özer & Ateş, 2021). Yoga shows an increase in quality of life in every aspect. An average difference of 15.38 between the intervention and control groups, yoga significantly improved the quality of life of patients and improved their kidney function (Pandey, Arya, Kumar, & Yadav, 2017).

The results of quality of life scores in each domain showed an increase after yoga and meditation intervention (Parekh & Prakasam, 2024). Based on qualitative research regarding patient experiences with mindfulness, this program is acceptable for people with kidney disease and supports their mental health and well-being (Wilson et al., 2023). After mindfulness meditation intervention, the level of stress experienced by patients was significantly reduced (Alhawatmeh et al., 2022). In addition, *mindfulness meditation* increases awareness of hemodialysis patients, helps regulate emotions and improves their quality of life. Research namely statistically *guided meditation* increases enthusiasm, happiness, inspiration, awareness of awareness, self-confidence, level of stability, clarity of mind and self-confidence. Thus, *mindfulness meditation* can be applied to hemodialysis patients to improve the quality of life of patients (Vaishnav, Hirapara, & Shah, 2022).

Table 2. Effectiveness of *Mind Body Theraphies*

(Author, Year)	*Mind Body Therapies*	Results
(Afshar et al., 2018)	*Guided imagery*	Reduces anxiety and improves sleep quality.
(Beizaee et al., 2018)	*Guided imagery*	Reducing anxiety and depression levels in hemodialysis patients.
(Ozer et al., 2021)	*Laughter yoga*	Reduce pain and improve sleep quality
(Birdee et al., 2015)	*Intradialytic yoga*	*Intradialytic yoga* can be applied to hemodialysis patients
(Bennet et al., 2015)	*Laughter yoga*	Both for the psychological and physiological impacts of hemodialysis patients.
(Parekh & Prakasam, 2024)	*Yoga and meditation*	Demonstrates improvements in quality of life in every domain.
(Alhawatmeh et al., 2024)	*Mindfulness meditation*	Helps manage stress, regulate emotions and improve their quality of life
(Vaishnav et al., 2022)	*Guided meditation*	Improving the burden and impact and overall quality of life scores of kidney disease
(Thomas et al., 2017)	*Mindfulness meditation*	Reduces symptoms of anxiety and depression
(Nassim et al., 2021)	*Brief mindfulness intervention*	Reducing symptoms of depression and anxiety in hemodialysis patients

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This intervention was carried out 6 times a week for 4 weeks (Afshar et al., 2018), 3 times a week for 4 weeks (Beizaee, Rejeh, Heravi-karimooi, et al., 2018).

Yoga therapy was given by a trained instructor in the field 3 times a week for 12 weeks, in 30 to 60 minutes of yoga during each session and the second hour of dialysis (Birdee et al., 2015). *Laughter yoga* was performed for 30 minutes, and a total of 16 sessions were held twice a week (Özer & Ateş, 2021) , performed for 30 minutes three times a week for four weeks (Bennett et al., 2015).

A trained program provided by a trained instructor in the field of 30 minutes per session, three times a week for five weeks, which was carried out while the patient was undergoing hemodialysis. (Alhawatmeh et al., 2022) , *guided meditation* was carried out for 30 minutes each dialysis (three times a week) for 6 weeks (Vaishnav et al., 2022) , conducted for 8 weeks, lasting 10-15 minutes, three times a week during hemodialysis (Thomas, Novak, Platas, Gautier, Holgin, Fox, Segal, Looper, Lipman, Selchen, Mucsi, Herrmann, & Rej, 2017), *brief mindfulness intervention* was conducted for 20 minutes per session for 8 weeks (Nassim, Park, Dikaios, Potes, Elbaz, Mc Veigh, Lipman, Novak, Trinh, Alam, Suri, Thomas, Torres-Platas, Vasudev, Sasi, Gautier, Mucsi, Noble, & Rej, 2021) .

Based on the discussion of this systematic review, *guided imagery* can be used to overcome anxiety, while yoga is more effective in improving overall quality of life. *Mindfulness meditation* has an effect on both but is more dominant in emotional regulation and psychological well-being. Yoga and meditation effectively showed an increase in quality of life in each domain ($p < 0.001$) (Prakasam et al., 2024).

CONCLUSION

In this systematic review, it was found that *mind body therapies* such as *guided imagery*, yoga, meditation have positive effects for hemodialysis patients, namely reducing anxiety and improving their quality of life. This effect is due to the mechanism of therapy that helps patients relax, stabilize emotions and divert patients' attention from negative thoughts related to their health problems. This intervention improves patients' quality of life in various aspects, including physical domains (decreased pain, improved vital signs), psychological (reduced stress, improved emotional regulation), social (better interpersonal relationships) and environmental (ability to adapt to hemodialysis therapy). This therapy can be used safely both during hemodialysis sessions and when done alone at home. With its various benefits, this therapy has the potential to be integrated into holistic and evidence-based patient care.

RECOMMENDATION

Further studies with broader scope, larger samples and more diverse populations are needed to evaluate the effectiveness of this therapy in various conditions.

REFERENCES

Afshar, M., Mohsenzadeh, A., Gilasi, H., & Sadeghi-Gandomani, H. (2018). The effects of guided imagery on state and trait anxiety and sleep quality among patients receiving hemodialysis: A randomized controlled trial. *Complementary Therapies in Medicine*, *40*(6), 37–41.

Alhawatmeh, H., Alshammari, S., & Rababah, J. A. (2022). Effects of mindfulness meditation on trait mindfulness, perceived stress, emotion regulation, and quality of life in hemodialysis patients: A randomized controlled trial. *International Journal of Nursing Sciences*, *9*(2), 139–146.

Alshammari, B., Alkubati, S.A., Alrasheeday, A., Pasay-An, E., Edison, J.S., Madkhali, N., Al-Sadi, A.K., Altamimi, M.S., Alshammari, S.O., Alshammari, A.A., & Alshammari, F. (2024). Factors influencing fatigue among patients undergoing hemodialysis: a multi-center cross-sectional study. *Libyan Journal of Medicine*, *19*(1).

Astuti, R. P., Sukarmin, Y., & Arovah, N. I. (2024). Yoga for Promoting Physical and Mental Health in Patients with Chronic Kidney Disease: A Systematic Review. *Traditional and Integrative Medicine*, *9*(2), 195-204.

Babakhani, M., Rahzani, K., Hekmatpou, D., & Sheykh, V. (2024). The Effect of Super Brain Yoga on The Cognitive Function of Hemodialysis Patients. *Heliyon*, *10* (16).

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Beizaee, Y., Rejeh, N., Heravi-Karimooi, M., Tadrisi, S.D., Griffiths, P., & Vaismoradi, M. (2018a). The Effect of Guided Imagery on Anxiety, Depression and Vital Signs in Patients on Hemodialysis. *Complementary Therapies in Clinical Practice*, *33*, 184–190.

Bello, A.K., Okpechi, I.G., Osman, M.A., Cho, Y., Htay, H., Jha, V., Wainstein, M., & Johnson, D.W. (2022). Epidemiology of Hemodialysis Outcomes. *Nature Reviews Nephrology*, *18*(6), 378–395.

Bennett, P.N., Parsons, T., Ben-Moshe, R., Neal, M., Weinberg, M.K., Gilbert, K., Ockerby, C., Rawson, H., Herbu, C., & Hutchinson, A.M. (2015). Intradialytic Laughter Yoga therapy for hemodialysis patients: A pre-post intervention feasibility study. *BMC Complementary and Alternative Medicine*, *15*(1), 1–7.

Birdee, G.S., Rothman, R.L., Sohl, S.J., Wertenbaker, D., Wheeler, A., Bossart, C., Balasire, O., & Ikizler, T.A. (2015). Feasibility and Safety of Intradialysis Yoga and Education in Maintenance Hemodialysis Patients. *Journal of Renal Nutrition: The Official Journal of the Council on Renal Nutrition of the National Kidney Foundation*, *25*(5), 445–453.

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

Dehghan, M., Namjoo, Z., Bahrami, A., Tajedini, H., Shamsaddini-lori, Z., Zarei, A., Dehghani, M., Ranjbar, M. S., & Nasab, F. R. S. (2020). The Use of Complementary and Alternative Medicines, and Quality of Life in Patients Under Hemodialysis: A Survey in Southeast Iran. *Complementary Therapies in Medicine*, *51* (May).

Foji, S., Tadayonfar, M. Alr., Mohsenpour, M., & Rakhshani, M. H. (2015). The study of the effect of guided imagery on pain, anxiety and some other hemodynamic factors in patients undergoing coronary angiography. *Complementary Therapies in Clinical Practice*, *21*(2), 119–123.

Giacobbi, P., Loughman, L., Brink, C., Shawley-Brzoska, S., & Misra, R. (2023). Thematic Analysis of Guided Imagery Scripts in a Multi-Health Behavior Change Intervention. *American Journal of Lifestyle Medicine*, *0* (0), 1–6.

Ignatavicius, D. D., Workman, M. L., Rebar, C. R., & Heimgartner, N. M. (2020). Medical-Surgical Nursing Concepts for Interprofessional Collaborative Care, 10th Edition.

Jain, F., Lenze, E., & Lavretsky, H. (2023). Advances in Mind/Body Therapies: Concept, Data and Delivery. *The American Journal of Geriatric Psychiatry*, *31*(3), S13–S14.

KauricKlein, Z. (2019). Effect of Yoga on Physical and Psychological Outcomes in Patients on Chronic Hemodialysis. *Complementary Therapies in Clinical Practice*, *34*, 41–45.

Ministry of Health of the Republic of Indonesia. (2018). Riskesdas Report 2018. Accessed from: https://repository.badankebijakan.kemkes.go.id/id/eprint/3514

Kinasih, A. S. (2010). The Effect of Yoga Practice on Improving Quality of Life. *Buletin Psikologi*, *18*(1), 1–12.

Krau, S. D. (2020). The Multiple Uses of Guided Imagery Guided Imagery Visualization Complimentary Medicine Intervention. *Vanderbilt University School of Nursing*, *55*, 467–474.

Nassim, M., Park, H., Dikaios, E., Potes, A., Elbaz, S., Mc Veigh, C., Lipman, M., Novak, M., Trinh, E., Alam, A., Suri, R.S., Thomas, Z., Torres-Platas, S., Vasudev, A., Sasi, N., Gautier, M., Mucsi, I., Noble, H., & Rej, S. (2021). Brief Mindfulness Intervention vs. Health Enhancement Program for Patients Undergoing Dialysis: A Randomized Controlled Trial. *Healthcare (Basel, Switzerland)*, *9*(6), 659.

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Özer, Z., & Ateş, S. (2021). Effects of laughter yoga on hemodialysis patients' plasma-beta endorphin levels, pain levels and sleep quality: A randomized controlled trial. *Complementary Therapies in Clinical Practice*, *43*(February).

Pandey, R., Arya, T.S., Kumar, A., & Yadav, A. (2017). Effects of 6 months yoga program on renal function and quality of life in patients suffering from chronic kidney disease. *International Journal of Yoga*, *10* (1), 3.

Parekh, A. J., & Prakasam, A. (2024). Effectiveness of Yoga and Meditation on Quality of Life Among Patients Undergoing Hemodialysis. *Indian Journal of Nephrology*, *34*(5), 533–536.

Sadock, E., Auerbach, S. M., Rybarczyk, B., Aggarwal, A., & Lanoye, A. (2014). The relationship of life stressors, mood disorders, and health care utilization in primary care patients referred for integrated behavioral health services. *The Journal of Nervous and Mental Disease*, *202*(10), 763–766.

Streeter, C.C., Whitfield, T.H., Owen, L., Rein, T., Karri, S.K., Yakhkind, A., Perlmutter, R., Prescot, A., Renshaw, P.F., Ciraulo, D.A., & Jensen, J.E. (2010). Effects of yoga versus walking on mood, anxiety, and brain GABA levels: a randomized controlled MRS study. *Journal of Alternative and Complementary Medicine (New York, NY)*, *16* (11), 1145–1152.

Thomas, N., & Noble, H. (2024). Renal Nursing: Care and Management of People with Kidney Disease, E-book.

Thomas, Z., Novak, M., Platas, S.G.T., Gautier, M., Holgin, A.P., Fox, R., Segal, M., Looper, K.J., Lipman, M., Selchen, S., Mucsi, I., Herrmann, N., & Rej, S. (2017). Brief mindfulness meditation for depression and anxiety symptoms in patients undergoing hemodialysis a pilot feasibility study. *Clinical Journal of the American Society of Nephrology*, *12*(12), 2008–2015.

United States Renal Data System. (2021). Annual Data Reports. Accessed from: https://usrds-adr.niddk.nih.gov/2020/end-stage-renal-disease/1-incidence-prevalence-patient-characteristics-and treatment-modalities

Vaishnav, B.S., Hirapara, J.J., & Shah, M.K. (2022). Study of the effect of guided meditation on quality of life in patients of end stage renal disease (ESRD) on maintenance hemodialysis – a randomized controlled trial. BMC Complementary Medicine and Therapies, 22 (1), 1–9.

Yoong, R.K., Mooppil, N., Khoo, E.Y., Newman, S.P., Lee, VY, Kang, A.W., & Griva, K. (2017). Prevalence and determinants of anxiety and depression in end stage renal disease (ESRD). A comparison between ESRD patients with and without coexisting diabetes mellitus. Journal of Psychosomatic Research, 94, 68–72.

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