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# The effect of psychosocial interventions on depression in individuals undergoing hemodialysis treatment: a review

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## ABSTRACT

Hemodialysis is one of the most widely treatment modalities used for chronic kidney disease. Although medical advances have enabled individuals to live longer, complications and symptoms associated with the treatment process can significantly affect their lives. Individuals undergoing hemodialysis treatment experience not only physical symptoms but also economic, social, and psychological challenges, with depression being one of the most prominent psychological problems. Depression and depressive symptoms in hemodialysis patients are associated with longer hospital stays, increased healthcare costs, and higher mortality risk. Moreover, depression profoundly impacts daily life by reducing treatment adherence and lowering quality of life. Pharmacological approaches are commonly used to manage depression; however, they are often insufficient due to potential drug interactions and adverse effects. Consequently, psychosocial interventions, such as cognitive behavioral therapy, group therapy, psychoeducation, music therapy, mindfulness practices, tele-nursing programs, and other complementary methods, have gained importance. This review aims to evaluate the effectiveness of psychosocial interventions in alleviating depression among individuals receiving hemodialysis treatment. To achieve this, relevant literature on psychosocial interventions for depression management in hemodialysis patients was analyzed, and evidence-based recommendations for clinical care were presented.

**Keywords:** Hemodialysis, chronic kidney disease, psychosocial interventions, depression, nursing, nursing care

## INTRODUCTION

Increased life expectancy has contributed to a rising prevalence of chronic diseases worldwide. Among these, chronic kidney disease (CKD) has emerged as a significant public health concern, both in Turkiye and globally (Seyahi et al., 2025). CKD is now recognized as one of the fastest-growing causes of death worldwide, accounting for approximately 2.4 million deaths annually. Importantly, it is the only noncommunicable disease with a consistently rising age-adjusted mortality rate (World Health Organization [WHO], 2024). According to the WHO (2024), CKD-related deaths increased by 95% between 2000 and 2021.

Renal replacement therapies, particularly hemodialysis (HD) treatment, play a crucial role in prolonging the life expectancy of patients with advanced CKD. HD is the most widely treatment modality used for CKD both in Turkiye and globally, with the primary goals of prolonging survival and improving quality of life in individuals with acute and end-stage kidney disease. According to data from the Turkish Society of Nephrology (2023), HD is the predominant renal replacement therapy in end-stage renal disease, accounting for 70.88% of clinical cases, with 63.454 patients receiving HD treatment (Seyahi et al., 2025). Individuals undergoing HD treatment face numerous biopsychosocial challenges throughout the process, which can significantly compromise their health status, daily life experiences, and overall quality of life (Bello et al., 2022). Similarly, the study by Ok and Işıl (2019) found higher psychological symptom scores among patients without public insurance, those separated from their partners, and those experiencing loneliness. Common difficulties included body image, self-esteem, sexual problems, and social isolation. These findings emphasise the significant correlation between sociodemographic vulnerability and psychological distress within this patient group.

HD treatment not only supports biological functions but also imposes a significant psychosocial burden due to its unique psychological challenges. Individuals with CKD have a considerably higher prevalence of psychiatric disorders than the general population. Commonly reported mental health problems in this population include depression, anxiety, hopelessness, psychosis, personality disorders, cognitive decline, delirium, and substance dependence (Carswell et al., 2023; Ok & Kutlu, 2020). A study reported a significant

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relationship between levels of hopelessness, anxiety, and depression in individuals undergoing HD treatment, and treatment compliance parameters. This further emphasizes the reciprocal relationship between psychological distress and treatment compliance in individuals receiving HD treatment (Ok & Kutlu, 2019). Following the acute phase, major depression is among the most common psychiatric disorders in individuals with CKD, with prevalence rates reported to be three to six times higher than in the general population (Adejumo et al., 2024). In this context, depression has been linked to several negative outcomes, such as increased hospitalizations and visits to the emergency department, non-adherence to treatment, an increased risk of suicide, and an overall decrease in quality of life and sleep patterns (Chopra et al., 2021).

## DEPRESSION IN INDIVIDUALS UNDERGOING HD TREATMENT

Depression is one of the most common mood disorders experienced by individuals undergoing HD treatment. The reported incidence of depression among HD patients varies widely, ranging from 5% to 60%. Depression negatively affects patients' physical and mental capacities, disrupting their social and occupational roles and contributing to sexual dysfunction. This further increases the overall disease burden (Goh & Griva, 2018). A review of the literature highlights an important distinction between depression and depressive symptoms. Depressive symptoms typically include low mood, slowed thoughts, speech, and movements, lethargy, feelings of weakness and worthlessness, lack of energy, pessimism, and reduced physiological functioning. In contrast, the diagnostic and statistical manual of mental disorders (DSM-5) defines depression as a mood state characterized by deep sadness, sometimes accompanied by anxiety, which persists for at least two weeks and represents a change from previous functioning (APA, 2013). Clinical depression is also characterized by psychomotor retardation, slowed thinking and talking, a lack of motivation, feelings of inadequacy, and pervasive pessimistic thoughts. For individuals diagnosed with CKD, depressive symptoms are often influenced by fears of losing health, physical strength, sexual function, independence, productivity, and overall well-being. There is a clear relationship between declining physical health and the severity of depressive symptoms. Depressive symptoms are frequently reported among individuals undergoing HD treatment. These symptoms are understood as psychological responses to the various losses these individuals experience (Chopra et al., 2021). Both pharmacological, such as antidepressants, and non-pharmacological interventions, such as cognitive behavioral therapy, group therapy, physical exercise, relaxation techniques, social support, network support groups, tele-nursing programs, and educational programs, can be used to treat depression in individuals undergoing HD treatment (Gerogianni et al., 2019).

Psychosocial interventions aim to provide psychological, emotional, and social support to individuals without the use of medication. In some cases, these interventions can reduce the need for pharmacological treatment or enhance its therapeutic effects. They can help to alleviate distressing symptoms, improve coping skills, strengthen social relationships, address disease-specific challenges, and reduce anxiety and stress (Gerogianni et al., 2019). However, there is no standardized method or universally accepted protocol for psychotherapeutic practices, and the duration, intensity, and level of interaction with the therapist or support provider can vary considerably. Given the potential pharmacological interactions and side effects associated with antidepressant therapy, psychosocial interventions are an important alternative for patients with CKD. Depressive symptoms in this population can impair treatment adherence, decrease functional capacity, and increase hospitalization rates (Hedayati et al., 2010). Consequently, numerous randomized controlled trials (RCTs) and meta-analyses have been conducted to investigate the effectiveness of psychosocial interventions in managing depression in individuals with CKD (Chopra et al., 2021; Yang et al., 2024).

## PSYCHOSOCIAL INTERVENTIONS

A review of the literature indicates that antidepressants are the preferred pharmacological treatment for depression in individuals undergoing HD treatment. However, their use is often limited in this population due to the risk of drug interactions associated with polypharmacy, as well as the accumulation of toxic metabolites resulting from reduced glomerular filtration (Gerogianni et al., 2019). In this context, psychosocial interventions represent an important alternative. These include cognitive behavioral therapy and relaxation techniques (e.g., Benson relaxation exercises), mindfulness-based techniques, guided imagery, educational programs, group therapies, laughter therapy, music therapy, self-management strategies, problem-solving training, and psychosocial support groups (Gerogianni et al., 2019; Chopra et al., 2021; Yang et al., 2024). Psychosocial interventions are generally recommended for individuals with mild depressive symptoms, while a combination of pharmacological treatment and cognitive behavioral therapy is advised for those with moderate to severe depression (Chopra et al., 2021; Yang et al., 2024). This review aims to evaluate the effectiveness of psychosocial interventions in managing depression in individuals undergoing HD treatment, and to discuss their potential contributions to clinical nursing practice (**Table**).

### Psychotherapy and Counseling-Based Interventions

Psychotherapy and counseling-based interventions are among the most used methods for treating depression in people undergoing HD treatment (Chopra et al., 2021; Yang et al., 2024). These interventions aim to alleviate negative emotional states by restructuring maladaptive thoughts, and behavioral patterns. There is evidence that short-term cognitive behavioral therapies and group-based programs can significantly reduce depressive symptoms, improve treatment adherence, and increase hope (Duarte et al., 2009; Lerma et al., 2017). Furthermore, psychoeducational programs can contribute to the development of coping skills by increasing patients' knowledge and self-awareness (Chopra et al., 2021).

**Cognitive behavioral therapies:** Cognitive behavioral therapy (CBT) is a form of psychotherapy that explores the relationship between thoughts, feelings, and behaviors. It is an effective treatment for a variety of mental health conditions and other psychological problems. Behavioral interventions within CBT are based on the systematic application of learning principles to identify and correct maladaptive behaviors. CBT incorporates various techniques, such as relaxation exercises, cognitive restructuring, and exposure therapy. In the context

**Table.** Effects of psychosocial interventions on depression in hemodialysis patients

| Intervention type | Study design | Main findings on depression | Notes/implications |
|---|---|---|---|
| Cognitive behavioral therapy (CBT) | RCTs, 5-10 weeks CBT programs | Significant reduction in depressive symptoms; improved treatment adherence, hope, and QoL, restructuring negative thoughts | Effective short-term; larger long-term studies needed |
| Group therapy | RCTs & quasi-experimental, 5–12 sessions | Decreased depression, improved coping, hope, and QoL, reducing psychological distress | Accessible, cost-effective |
| Psychoeducation | RCTs (patients & families) | Reduced depression, improved treatment and fluid adherence; effects sustained up to 6 months | Family involvement strengthens outcomes |
| Tele-nursing programs including psychosocial interventions | Quasi-experimental, structured calls | Lower depression and anxiety; improved symptom management | Supports continuity of care |
| Mindfulness-based interventions | RCTs, pilot trials | Reduced depression, anxiety, and stress; improved well-being, fostering self-awareness | Promising; requires standardized protocols |
| Benson's relaxation techniques | RCTs | No significant effects | Evidence remains inconsistent; further high-quality RCTs with standardized protocols are needed |
| Laughter yoga | RCTs | Decreased depression; improved mood | Simple, low-cost complementary approach |
| Music therapy | RCTs | Significant reduction in depressive symptoms; better QoL, reducing fatigue and anxiety | Effective adjunct during HD sessions |
| Social support | RCTs | Reduced depression; enhanced treatment adherence | Strong evidence indicates that family and social support reduce depressive symptoms and improve adherence; interventions should prioritize strengthening support networks |
| Spiritual/religious interventions | RCTs, observational studies | Reduced depression; improved coping, reducing negative thoughts, | Culturally sensitive, context-dependent |

RCT: Randomized controlled trial, HD: Hemodialysis

of HD, CBT approaches have been found to reduce depressive symptoms, improve treatment adherence, and lower suicide risk. They have also been shown to alleviate the overall burden of disease and enhance quality of life. Improvements have been documented in areas such as social relationships, sleep quality, general health, and psychological well-being (Chopra et al., 2021). Lerma et al. (2017) also reported that a short-term, five-week CBT program was effective in alleviating depressive symptoms among individuals undergoing HD treatment. Meta-analyses and systematic reviews provide further evidence of the effectiveness of CBT for individuals undergoing HD treatment. These studies indicate that CBT alleviates depressive symptoms, reduces anxiety, improves quality of life, and enhances treatment adherence.

**Group therapies:** Group therapy is a form of psychosocial intervention that is one of the most affordable and accessible treatment approaches for individuals facing a wide range of difficulties. These include challenges in coping with illness and implementing behavioral or lifestyle changes (Drum et al., 2011). There is consistent evidence that group psychotherapy interventions improve quality of life, reduce psychological distress, strengthen coping skills, and alleviate symptoms and pain in patients with end-stage renal disease (Poorgholami et al., 2015). Duarte et al. (2009) reported that a 12-week CBT program administered to individuals undergoing HD treatment with major depression significantly improved depressive symptoms, with benefits sustained at 3- and 9-month follow-ups. Lerma et al. (2017) conducted a five-week group CBT program incorporating behavioral activation, deep breathing, muscle relaxation, and cognitive restructuring techniques with small groups of three to six participants and reported improvements in depressive symptoms and quality of life one month after treatment.

**Psychoeducation:** Psychoeducation has been identified as an effective intervention for reducing depressive symptoms in individuals undergoing HD treatment. CBT is frequently integrated with psychoeducation to further improve quality of life and reduce depression and anxiety in this population (Al-Saraireh et al., 2018). Al-Saraireh et al. (2018) compared the effects of psychoeducation and CBT on depression in individuals undergoing HD treatment, reporting that psychoeducation was more effective in reducing depressive symptoms. Similarly, Chen et al. (2023) found that the positive effects of psychoeducation on depressive symptoms persisted at 1-, 3-, and 6-month follow-ups.

**Tele-nursing programs including psychosocial interventions:** Evidence suggests that tele-nursing is an effective way of providing psychosocial support to people undergoing HD treatment. Tele-nursing programs have been shown to reduce anxiety, depression, and stress in individuals undergoing HD treatment by facilitating effective symptom management and enabling the early identification of treatment-related complications (Jahromi et al., 2015). Supporting these findings, Rajkomar et al. (2014) found that telephone communication with dialysis nurses and technicians during home-based HD improved treatment management and elicited positive emotional responses from patients and caregivers alike. Similarly, Jahromi et al. (2015) demonstrated that daily, 30-minute structured telephone support calls for 30 consecutive days following dialysis sessions were effective in reducing depressive symptoms.

In addition to nurse-led telephone follow-ups serving as a means of psychosocial support in HD, with RCTs confirming reductions in depression, anxiety, and stress, broader telehealth approaches that embed structured psychosocial components have likewise been shown to enhance psychological outcomes and quality of life (Yang et al., 2024). However, further high-quality RCTs with standardized protocols are required to consolidate these findings.

## Mindfulness and Mind-Body Based Interventions

Mind–body interventions contribute to reducing depressive symptoms by emphasizing stress management and relaxation. Interventions such as mindfulness-based therapies, relaxation exercises, and guided imagery have been shown to effectively reduce the psychological distress experienced during HD treatment (Razzera et al., 2021). Among these, Benson relaxation exercises and laughter yoga enhance emotional regulation by fostering greater self-awareness. Further evidence highlights that such practices have a positive effect on anxiety and depression (Bennett et al., 2018).

**Mindfulness-based interventions:** Over the past two decades, research has consistently demonstrated the positive impact of mindfulness-based meditation on physical and mental health. Mindfulness is defined as a state of consciousness characterized by non-judgmental awareness of present experiences, rather than an attempt to alter or eliminate them (González-Valero et al., 2019). The growing interest in mindfulness-based interventions for chronic diseases is largely due to their proven positive impact on quality of life and overall health (Goldberg et al., 2018). Consistent with this evidence, meditation has been shown to provide long-term psychological and clinical benefits in the management of end-stage renal disease and HD treatment (Bennett et al., 2018). Furthermore, a systematic review reported that mindfulness-based approaches with individuals undergoing HD treatment effectively reduced depressive symptoms (Razzera et al., 2021).

**Laughter yoga:** Laughter therapy involves the sustained practice of "intentional laughter" to achieve the psychological and physiological benefits associated with laughter. In the context of chronic diseases, laughter yoga has been shown to improve mood and alleviate depressive symptoms (Shahidi et al., 2011). The study conducted with individuals undergoing HD treatment suggests that laughter yoga effectively reduces depressive symptoms (Bennett et al., 2020).

**Benson's relaxation techniques:** Benson's relaxation techniques, which include rhythmic breathing exercises such as slow breathing, deep breathing, breath meditation, and abdominal breathing, have been shown to alleviate stress and anxiety in patients undergoing HD treatment (Mahdavi et al., 2013). However, findings regarding their effectiveness remain mixed. For example, a systematic review of studies on Benson's relaxation techniques in individuals undergoing HD treatment reported positive outcomes in one study, while two others found no significant effects (Abu Maloh et al., 2022).

## Art, Social, and Support-Based Interventions

Interventions focusing on art and social support are complementary strategies that can enhance the emotional well-being of individuals undergoing HD treatment. For instance, music therapy provides patients with a means of emotional expression, while psychosocial support groups help reduce feelings of loneliness by strengthening social connections. These interventions are important in improving quality of life and helping patients to cope with depression. There is evidence that music-based interventions and support groups effectively reduce depressive symptoms and promote treatment adherence (Yang et al., 2024).

**Music therapy:** Music therapy is a non-pharmacological intervention that involves the structured use of musical elements, such as melody, rhythm, and harmony, over a defined period. Its application to individuals undergoing HD treatment has increased in recent years. A systematic review indicates that music therapy effectively reduces depressive symptoms in individuals undergoing HD treatment (Nishiwaki et al., 2025).

**Social support:** Social support is widely recognized as a key factor in improving health outcomes for patients with chronic diseases. Among individuals undergoing HD treatment, mental health is strongly influenced by the level of support they receive from family members and their broader social networks. Evidence suggests that social support enhances treatment adherence in this population by reducing depressive symptoms (Gerogianni et al., 2019).

Research has also highlighted an association between low social support and greater psychological distress in individuals undergoing HD treatment. Research has shown that limited support from family and friends is linked to higher levels of anxiety and depression in HD patients (Lilympaki et al., 2016), whereas greater family and friend support has been associated with fewer depressive symptoms (Pan et al., 2019).

**Spiritual and religious interventions:** Spirituality and religion are important coping resources for individuals with chronic illness. Spirituality is often defined as the search for meaning, peace, and purpose beyond organized religion, while religion refers to structured beliefs and rituals rooted in faith traditions (Tanhan & Young, 2022). Within nursing, spirituality is regarded as a holistic dimension of care and a fundamental human need, particularly relevant for individuals undergoing HD treatment (Jaberi et al., 2019). Spiritual and religious practices may include prayer, meditation, reading sacred texts, listening to religious music, or participating in communal worship (Darvishi et al., 2020). For Muslim patients, listening to the Qur'an has also been found to alleviate depressive symptoms (Mashitah et al., 2020). These practices can be carried out by patients themselves, supported by family members, or facilitated by nurses and spiritual counselors.

Evidence shows that religiosity and spirituality enhance coping, reduce anxiety and depression, and improve quality of life in individuals undergoing HD treatment (Fradelos et al., 2021). Nearly 80% of individuals with CKD report high levels of religious/spiritual coping, which foster hope and positive adaptation (Valcanti et al., 2012; Hekmati Pour & Hojjati, 2015). However, negative forms of religious coping, such as feelings of abandonment by a higher power, have been linked to psychological distress and poorer health outcomes (Taheri-Kharameh et al., 2016).

Given the demanding and long-term nature of HD treatment, spiritual and religious support is especially valuable. Nurses play a central role in recognizing these needs, encouraging individuals to use their personal resources, and integrating spiritual care into clinical practice to strengthen resilience, improve adherence, and enhance overall quality of life (Jaberi et al., 2019).

## CONCLUSION

For individuals on HD treatment, depression is not only a psychological issue but also a determinant of treatment adherence, clinical outcomes, and quality of life. Because of the risks associated with pharmacological therapies, psychosocial interventions are increasingly emphasized as essential in managing depressive symptoms. Evidence supports the effectiveness of approaches such as CBT, group-based programs, psychoeducation, relaxation techniques, music therapy, mindfulness practices, tele-nursing, and other complementary strategies.

Nurses hold a central position in identifying depression early and in planning and monitoring interventions. Their role extends beyond physiological monitoring to include the psychosocial well-being of patients. Within this framework, depression management should be prioritized in clinical practice, with structured psychosocial programs embedded into HD units and families actively involved in care. Regular assessments by consultation-liaison psychiatry teams support early recognition and individualized treatment planning. Nurses in these teams provide psychoeducation, strengthen adherence, and help patients and families develop coping skills. In-service training is also necessary to improve awareness of depression management and increase the impact of psychosocial interventions.

Current evidence on psychosocial interventions in HD is still limited, particularly concerning long-term outcomes and cultural adaptability. High-quality RCTs focusing on nurse-led strategies are needed to establish a stronger evidence base for their integration into routine practice. In parallel, incorporating the principles of depression recognition and psychosocial care into undergraduate and postgraduate nursing curricula will prepare future nurses to detect symptoms promptly, deliver patient-centered interventions, and work effectively within multidisciplinary teams. Linking research with education in this way can enhance clinical practice and training, ultimately improving outcomes and quality of life for individuals undergoing HD treatment.

## ETHICAL DECLARATIONS

### Peer Review Process

This review was externally peer-reviewed.

### Conflict of Interest

The authors declare no conflicts of interest.

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