



A Comprehensive Review on Psychological Aspects and Quality of Sleep in Patients with End-Stage Renal Disease Undergoing Hemodialysis

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ABSTRACT

BACKGROUND : Hemodialysis is a major therapeutic method for many end stage renal disease patients that causes complications. Quality of life (QOL) of these patients affected by high prevalence of sleep disorders, which is concomitant with physical, behavioral, and psychological problems. Many of these patients struggle to manage their illness because they have low self-esteem, stress, worry, depression and sleep disturbances. It has been shown that between 45 and 80% of dialysis patients have poor sleep and 50% of patients have psychological problems. Based on the increasing number of hemodialysis patients, there is limited information about the effect of these problems on the patient's quality of life. **OBJECTIVE:** On completion of this article, the reader should be able to understand and summarize impact of hemodialysis on physiological well-being and quality of sleep in patients with end stage renal disease. **METHOD SA** literature review based on previous studies and assessments derived from international databases (PubMed, Medline and Scopus) related to people's psychological problems and quality of sleep in ESRD patients undergoing hemodialysis.

Keywords : Hemodialysis, kidney failure, end stage renal disease, psychological disorders or factors, economic status, social status, and quality of sleep

INTRODUCTION

Chronic Kidney Disease (CKD) is a progressive disease that does not have any warning signs. Sometimes people lose up to 90% of their kidney function before getting any symptoms, and they progress to a state that can be called end-stage kidney disease (ESKD)/end-stage renal disease (ESRD), or end-stage kidney failure¹. The number of individuals living with ESRD is steadily increasing². ESRD is increasing in epidemic proportions in India and will be the third biggest culprit of morbidity and mortality after cancer and cardiovascular diseases³. Hemodialysis is the final treatment in ESRD patients and plays a pivotal role in palliative therapy. Lifetime dependence on dialysis treatment, high mortality rates, and the adjustments to the sick condition can cause physical, economical, and social changes, as well as psychological effects such as depression, anxiety, hopelessness, fatigue, decreased quality of life, and increased suicide. Psychological changes that occur in patients can cause psychological well-being disorders⁴. Psychiatric comorbidity hurts quality of life (QoL) and response to treatment in renal transplant patients, which is one reason for worse outcomes. Psychological and social issues are a relatively unresearched but important concern for the general health of patients with hemodialysis. Stress is associated with chronic diseases and their treatment and can impact psychological and medical results⁵. Sleep disturbance is not uncommon among chronic hemodialysis patients⁶. Poor sleep quality affects many hemodialysis patients and can potentially predict their morbidity, mortality, quality of life and pattern of medication use. The reported prevalence of 'poor sleep', including sleep-wake complaints, sleep-disordered breathing and excessive sleepiness, in dialysis patients is in the range of 45–80%⁷. Sleep disorders and sleeplessness in hemodialysis patients is due to the illness, treatment, and medicines which influence their ability to perform daily activities⁸. Sleep quality is an important and determining factor in the quality of life in dialysis patients⁴. Poor sleep quality can worsen hypertension, type 2 diabetes and obesity, thereby increasing the incidence of cardiovascular disease, as well as accelerating the progression of end-stage kidney disease and reducing survival rates⁹. Based on the increasing number of hemodialysis patients, it seems that these problems are increasing and the studies and researches in this field are insufficient. On the other hand, it should be noted that culture and cultural customs are also effective factors on patients' sleep quality. That is, religious ceremonies, sleep time, sleeping place, and sleep schedule may change according to every patient's culture⁸. Awareness of sleep quality and psychological of these patients is an important factor in making clinical decisions and controlling the problems. In this review, we have tried to highlight psychological aspects and quality of sleep in patients with ESRD which can be addressed to improve the life of patients undergoing hemodialysis.



DISCUSSION AND OBSERVATIONS

Effect of CKD on quality of life

The perception of QoL by patients with end-stage renal disease is an important measure of patient outcome¹⁰. Although hemodialysis prolongs the lives of patients, it has serious physical, psychological, and social consequences that affect both their quality of life and their families. Patients undergoing hemodialysis may experience various problems, including peripheral neuropathy, infection, sleep disturbances, cognitive changes, weight loss, psychological stress, decreased viscosity, anxiety, depression, etc.¹¹ A person's expectations of their QoL will vary according to factors such as age and past personal experiences¹². The quality of life of CKD patients and their families is strongly related to changes in lifestyle and daily habits. At the same time, it significantly affects patients' physical health, functional status, personal relationships, and social and economic well-being¹³. Studies show that low kidney function, fatigue and sleep disturbances are the most critical factors that reduce quality of life¹⁴. Patients on HD not having adequate QoL in all domains except patient satisfaction due to changes in the physiological, chemical changes occur in the kidney¹⁵. Mental health problems can be particularly important in CKD patients due to increased stress, social isolation and fatigue. Doctors often lack of knowledge about psychiatric disorders and do not give them enough attention when the patient needs it. The psychopathology of patients with kidney disease plays a key role in the outcome of kidney disease and the appearance of mental health symptoms. The patient's social or family support and the support of the nursing staff are important factors that influence the patient's compliance with the disease¹⁵. In a patient with such a chronic health problem, the strong try to mobilize adaptive strategies for the disease, while the weak lead to the development of mental disorders, non-compliance with treatment and usually leads to disruption of personal and family relationships. Dialysis patients experience a high burden of physical and emotional symptoms directly affecting their sleep and quality of life¹⁶.

STRESSORS OF PATIENTS UNDERGOING HAEMODIALYSIS

The primary stressors are financial difficulties, changes in social and marital relationships, regular admission to hospital, inability to leave, bringing downtime, fears of disability or death, increasing dependence on artificial renal machines, uncertainty about the future, and physical exhaustion¹⁷. These stressors can lead to psychological and physical strain. These stressors may be related to lifestyle or changes in habits due to the condition. Furthermore, according to Gerogianni, limitation of liquids and foods is the most frequent stressor for these patients. That is because the daily consumption of fluids should not exceed of 500 ml per day due to the risk of causing pulmonary edema. An equally distressing factor is the requiring effort to follow the dietary guidelines, as the excessive intake of potassium and phosphorus is responsible for causing heart failure and possible itching or renal osteodystrophy respectively¹⁸. A recent research study conducted in Greece by Kaitelidou et al., showed that unemployment is a significant stressor for haemodialysis patients. According to that study, 60.2% of patients receiving dialysis were not able to keep their profession and 36.7% had to retire after the beginning of dialysis¹⁹. Loss of employment is responsible for the appearance of intense anxiety and problems of sexual function while employment positively affects the psychological status and libido of spouses^{18,20}. Another one significant stressor is fatigue, which can negatively affect a person's ability to work and to participate in various daily activities. Physical or mental fatigue can be caused by sleep disorders or fatigue after dialysis¹⁸.

Depression: a Greater Focus of Attention

Depression can occur in 73%, and most individuals are in the moderate to a severe group of depression. Depression in chronic renal failure patients is more common, especially from the third to ninth year of therapy, and more often affects women. Depression is also mainly manifested by sadness, anxiety, depression, poor self-assurance, future pessimism, decreased libido, sleep disturbances, and a lack of appetite⁵. Depression can cause numerous emotional and physical challenges that can lower the ability of a person to conduct routine activities²¹. Patients on hemodialysis exhibit depression rates about 3 times higher than the general population. Shirazian et al., reported that 20% to 40% of dialysis patients have depression and attributed this to the biological and psycho social transformations associated with dialysis²². Andrade et al., found that depression has been recognized as the most common psychological problem that causes resistance to treatment and there is a significant association between depression and mortality of dialysis patients²³. Moreover, Andrade and Sesso found that the percentage of depressive symptoms among patients undergoing dialysis is slightly higher compared to patients under conservative treatment of CKD²⁴. Hedayati et al., observed that depression is responsible for the highest annual mortality of haemodialysis patients in Pakistan, compared with patients in Western countries²⁵. Hedayati and colleagues found that when compared with the general population, patients with ESRD show more than five times the rate of suffering from depression²⁶. Drayer and colleagues found that patients with ESRD and depression have 4.1 times the mortality rate of patients with ESRD who do not have depression²⁷. Patients with ESRD are often poorly adherent to their medical regimens, and Cukor and coworkers have reported depression as an independent factor for nonadherence in patients on maintenance dialysis²⁸.



Anxiety: An Often Overlooked Disturbance

Anxiety has been an understudied aspect of psychiatric illness in patients on maintenance dialysis. Most studies have focused on depression in these individuals. The National Institute of Mental Health defines an anxiety disorder as “an excessive, irrational dread of every day situations”²⁹. It is important to consider anxiety disorders when evaluating the psychosocial status of ESRD patients. Anxiety is characterized by disruptive feelings of uncertainty, dread, and fearfulness. A variety of common medical complaints may be manifestations of an anxiety disorder, including palpitations, tremors, indigestion, numbness/tingling, nervousness, shortness of breath, diaphoresis, and fear³⁰. Precise data regarding the prevalence rate of anxiety disorders among patients with ESRD are unknown, but Kutner and colleagues³¹, Taskapan and colleagues³² and Cukor and coworkers³³ reported prevalence rates of 45%, 30%, and 45.7%, respectively. A review of 55 studies of the prevalence of symptoms of anxiety in patients with ESRD by Murtagh and coworkers found that 38% of patients with ESRD (12% to 52%) have substantial anxiety³⁴.

Self-Esteem

Additionally, patients with chronic kidney disease have difficulties in participating in sports and social activities. This has a negative effect on feelings of autonomy and self-esteem³⁵. Regarding the psychosocial picture of patients undergoing chronic dialysis program, self-esteem seems to be moderate to high, in patients who have interests, to those of them who are in good economic condition and being employed³⁶. According to the theory of self-determination, autonomy is one of the basic human psychological needs contributing to daily well-being and psychological well-being³⁷. When the fulfillment of autonomy need is hampered by various factors, patients experience poor self-esteem and bad psychological condition^{38,39}.

Problems in Receiving Psychiatric Help

Renal failure patients have been noted as the biggest deniers of psychiatric illness⁴¹. They often feel that they are overdoctored and even motivational psychotherapy is best administered in the dialysis unit itself. Many patients on dialysis do well if individual psychotherapy is administered during the dialysis sessions itself. Another complication is the nonadherence to the treatment and medical regimens. Such patients take appointments, but do not visit the doctor and may also get angry on the staff of the dialysis unit. The dialysis population is not just a cross section of the general population. This group is skewed in the direction of the noncompliant diabetic, noncompliant hypertensive and also the alcoholic. These patients often express their anger as they feel that many others lead a normal life, while they have to suffer and undergo repeated medical procedures. The average age of the ESRD patient is 65 years. They are not only older but more infirm. Many of them have comorbid diabetes, hypertension, peripheral arterial disease, cardiomyopathies and arthropathies, which contribute to patient symptoms and reduction in the quality of life (QOL). Denial of death is also a common problem in such patients. Mental health professionals may often be needed in such cases to provide end-stage counseling and psychotherapy. An increase has been projected in ESRD patients worldwide with decrease in the number of nephrologists, specialized staff and professionals trained to help them. An effective team work often, interdisciplinary, is a must in the effective management of interconnected problems; it is only the collaborative effort that leads to better outcomes and improved quality of life⁴¹.

Quality of sleep

Despite many advances in the treatment of chronic renal failure, the quality of sleep in patients who suffer from this disease is at the risk. The high prevalence of sleep disorders in hemodialysis patients, which is concomitant with physical, behavioral, and psychological problems, has always affected these patients' quality of life⁴². Common sleep complaints in patients with endstage renal disease (ESRD) on dialysis includes delayed sleep onset, frequent awakening, restlessness and daytime sleepiness⁴³. Sleep quality is a sense of one's satisfaction with sleep which is only determined by a person himself preparing at night such as the ability to stay asleep, and the ease of staying asleep without the need for medical assistance⁴⁴. There are several factors that can cause sleep disorders such as demographic factors (age, gender, occupation, education level, marital status, ethnicity/race, spiritual), lifestyle factors (smoking, consuming coffee) psychological factors, biological factors (predisposing to kidney failure, anemia), environmental factors (comfort, physical environment/pain), and factors of dialysis therapy (hemodialysis schedule, length of time of hemodialysis)⁴⁵. In the results of study conducted by Shen, it was found that around 69.1% of them had poor sleep quality due to sleep complaints such as insomnia, difficulty starting to sleep, waking up in the morning not feeling refreshed⁴⁶. The incidence of sleep disturbances among patients with hemodialysis is higher than general population. Lack of sleep and poor sleep quality can worsen hypertension, type 2 diabetes and obesity, thereby increasing the incidence of cardiovascular events, as well as accelerating the progression of end-stage kidney disease and reducing survival rates⁴⁷. It was shown in a study conducted by Novak et al., on hemodialysis patients that sleeplessness is the most prevalent sleep disorder in these patients⁴⁸. Parker et al determined that 85% of hemodialysis patients have major sleep disorders affecting their QoL⁴⁹. Yoshioka et al reported that sleep disturbances experienced by hemodialysis patients and long-term hemodialysis treatment caused a decrease in patients' QoL⁵⁰. Edalat-Nejad M and Qlich-



Khani M. reported that poor sleep is common in dialysis patients and there was a strong association between quality of sleep and mental QoL, especially for subjective sleep quality and sleep efficiency⁵¹.

CONCLUSION

This review highlights the significant impact of end-stage renal disease (ESRD) and hemodialysis on both the psychological well-being and sleep quality of patients. Hemodialysis, while life-saving, is associated with a high prevalence of sleep disturbances and mental health issues such as depression, anxiety, and low self-esteem. These factors contribute to a diminished quality of life (QoL) in affected individuals. The strong link between poor sleep quality and impaired mental health further exacerbates the overall well-being of hemodialysis patients.

Given the high incidence of psychiatric disorders among ESRD patients, particularly depression and anxiety, it is crucial to address these psychological challenges alongside the physical treatment of the disease. Regular psychological assessments, counseling, and tailored interventions focused on improving sleep quality can significantly enhance the patients' overall QoL. Furthermore, incorporating patient education, family support, and a multidisciplinary approach to patient care will contribute to better management of both psychological well-being and sleep quality in these vulnerable populations. Training and advocacy programs are essential, particularly for older adults and those from lower socio-economic backgrounds, to help mitigate the severe effects of ESRD on their mental and physical health.

Improving the quality of life for hemodialysis patients goes beyond just extending their lives—it involves addressing their psychological needs and ensuring they can live with dignity and satisfaction.

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