

Psychological Effects of Chronic Haemodialysis

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Abstract:

Introduction: Despite advancements in renal replacement therapies and increased survival, patients still face several physical, psychological and social limitations as consequences of chronic kidney disease and treatment complexity. The daily struggle with end-stage renal disease symptoms and related comorbidities, along with the need to cope with psychosocial stressors, directly impacts patients' quality of life and mental health. The aim of this literature review was to explore the impact of haemodialysis on psychological aspect of people with chronic end stage renal failure.

Material and Methods: Literature review based on studies and reviews derived from international (Medline, PubMed, Cinahl, Scopus, the Centers for Medicare & Medicaid Services (CMS), the Cochrane Library Website, and the Cochrane Database of Systematic Reviews data bases concerning social problems of people with renal failure.

Results: This study revealed that depression and anxiety are common conditions among chronic kidney disease patients and that they occur more frequently among those undergoing dialysis than among those undergoing transplantation. Lower quality-of-life scores were associated with symptoms of depression in both types of renal replacement therapy. Presence of comorbidities, loss of vascular access and worse quality of life were associated with anxiety symptoms among dialysis patients,

Conclusion: Patients with chronic renal disease undergo emotional, physical, psychological, social, and existential burdens. Providing social support, support of the family and support of the friendly environment in patients with CRF is associated with reduction in depressive symptoms, positive perception of their illness, general satisfaction of life and increased compliance to the treatment regimen.

Keywords: chronic renal failure, patients, psychological aspect

1. INTRODUCTION

End-stage renal disease (ESRD) is a debilitating, chronic condition whereby the kidney failure requires artificial means of excretion for survival. The primary means to achieve this are by haemodialysis done several times weekly. Consequently, patients with ESRD undergo a number of lifestyle, dietary, and fluid restrictions in order to accommodate their illness.

Despite advancements in renal replacement therapies and increased survival, patients still face several physical, psychological and social limitations as consequences of chronic kidney disease and treatment complexity (1). The daily struggle with end-stage renal disease symptoms and related comorbidities, along with the need to cope with psychosocial stressors, directly impacts patients' quality of life and mental health. These lifestyle restrictions significantly impact on social functioning with patients performing a balancing act to ensure maintenance of vitamin, iron, and protein levels. Such restrictions can impact on patients' illness beliefs, sense of personal control leading to anxiety and depression, inhibiting coping, and adjustment (2).

Depression and anxiety are considered to be the most common end-stage renal disease-related

psychological disorders, with higher prevalence and incidence rates in this population than those in the general population. According to the World Health Organization, the estimated global prevalence rates of depression and anxiety in 2015 were 4.4% and 3.6%, respectively, with an increase in reported cases of 18% between 2005 and 2015 (3). The anxiety and depression rates that have been

estimated among end-stage renal disease patients are not accurate: they range from 0 to 100%, depending on the diagnostic criteria, assessment tool and population characteristics (4). A systematic review of 55 studies revealed prevalence rates of 38% and 27% for anxiety and depression, respectively, among end-stage renal disease patients (5). The high frequency and impact of affective symptoms in nephrology practice have led the research community to devote increasing attention to depression and anxiety over the last few years. In end-stage renal disease, these mental disorders are associated with various conditions that lead to poorer health outcomes, with direct impacts on patients' quality of life and survival (6). Anxiety and depression are also associated with unhealthy forms of behavior, such as alcohol and tobacco use, poor eating habits, sedentary lifestyle and non-compliance with treatment. These factors translate into increased risks of clinical events and the need for emergency services, thus resulting in higher healthcare costs (7). The aim of this literature review was to explore the impact of haemodialysis on psychological aspect of people with chronic end stage renal failure.

2. MATERIAL AND METHODS

Literature review based on studies and reviews derived from international (Medline, PubMed, Cinahl, Scopus, the Centers for Medicare & Medicaid Services (CMS), the Cochrane Library Website, and the Cochrane Database of Systematic Reviews data bases concerning social problems of people with renal failure. Also, were used some keywords *haemodialysis*, *psychosocial factors*, *social status*, *economic status*, *renal failure*, *quality of life*, as well as articles which provided valid and documented data from global research and epidemiology.

3. RESULTS AND DISCUSSION

Kimmel et al. (8) investigated the impact of psychosocial factors on behavioural compliance and survival in urban haemodialysis patients. Depression was related to decreased adherence to treatment. Depression is strongly recognized as a common psychological problem in haemodialysis patients.

The rate of psychiatric disorders in a population of ESRD patients was considerably higher than in a population with other chronic medical conditions. Chilcot et al. (9) reported that 20–30% of ESRD patients have significant depressive symptoms compared to the lifetime prevalence of depression in the general population of approximately 16%.

Depression can complicate long-term conditions, potentially becoming more resistant to treatment over time. Depressed patients are found to be three-times as likely to be noncompliant with treatment recommendations as nondepressed patients.

Additional stressors associated with ESRD include biochemical imbalance, physiological changes, neurological disturbances, cognitive impairment, and sexual dysfunction. All can potentially play a role in depression.

A qualitative study by Gregory et al. (10) found patients with ESRD receiving haemodialysis developed a new identity and sense of self. This new and evolving emotional/psychological state indicated that patient's became cognisant of a new set of circumstances: an uncertain future, demands of illness, dependence of machinery, medication, and healthcare providers.

Kimmel et al. (5) found that perception of illness intrusion is linked to poorer survival rates. Illness representations predicted nonadherence to fluid restrictions amongst haemodialysis patients. Compared to other chronic illnesses, haemodialysis patients assessed their physical health as markedly diminished. Illness perceptions are significant predictors of coping, adjustment, and outcome. Additionally, within a sample of UK renal patients, patients' perceptions of treatment control predicted survival independently of survival risk factors, including comorbidity, illustrating the negative impact of maladaptive illness perceptions on clinical outcomes. Griva et al. (11) found that treatment and illness perceptions were formed as a function of different ESRD treatment.

Transplanted patients perceived their condition as less chronic, reported fewer symptoms compared to dialysis patients.

Curtin et al. (12) provided insights into "the transformational experience" of survivors of long-term dialysis. The restructuring of illness beliefs and modification of "illness" cognitions result in positive

changes; patients can become “active self managers of their disease, its treatment and its manifestations.” “The concept of transformation is often advanced as the embodiment of successful adjustment to a chronic illness”.

Diminished quality of life (QOL) is linked to limited personal freedom and control, for example, lengthy treatment time extended lives but contributed to these restrictions. Loss of freedom was also associated with protracted preparations for dialysis which was a major source of frustration. Overall, the loss of freedom had wider implications altering marital, family, and social relationships. A sense of control over illness influences coping and adjustment in a long-term physical health problems. Cvendros et al. (13) found that health locus of control could be enhanced by helping patients to focus their attention on practical ways of coping.

A randomised controlled trial of a cognitive behavioural therapy empowerment intervention indicated significant improvements in sense of empowerment, self-care, self-efficacy, and depression, when the following strategies were implemented: identification of problem areas, exploration of emotions associated with these problem areas, goal and strategy development, implementation of behaviour change plans, and stress management. Such interventions might be effective in improving self-management.

Impaired self and body image are common psychological consequences of living with ESRD. Self-image and self-esteem have a bearing on aspects of QOL, which encompasses the physical, social, and emotional elements of wellbeing. Patients may have to adjust to their changing appearance by altering the way they dress and how they relate to others.

Dialysis treatment can significantly impact upon body image, as patients might perceive themselves as unattractive. For example, procedures to create a point of access for dialysis via a fistula, neck line, or catheter can all change the appearance of the body. Immunosuppressant drugs taken to prevent organ rejection also contribute to obvious bodily changes impairing self-acceptance. Reflecting upon renal nursing practice, Muringai et al. (14) discussed the need for a “holistic assessment tool” that allows for psychological considerations of body image.

The roles within marital relationships change when a spouse or partner becomes a carer and can give rise to depression in the carer as a consequence. The patient might become the focus of negative emotions. In addition, sexual difficulties can sometimes occur as a result of erectile dysfunction in male patients with ESRD and can undermine intimacy. A literature review by Low et al. (15) explored the impact of caring for a patient with ESRD, in relation to quality of life, psychological health, morbidity, responsibilities or “burdens,” and coping strategies. It concluded the profound changes in roles and relationships on partners and within the family as a consequence of ESRD.

The relationship between mental disorders and quality of life is complex and needs to be discussed in a comprehensive manner. Despite advancements in renal replacement therapies, improved control over chronic kidney disease symptoms cannot prevent deterioration of quality of life. This has a significant impact on patient vitality and physical and mental capacity.³³ Depression and anxiety not only interfere with the routine and habits of the individuals affected, but also impact self-perceived health and the ability to manage the many positive and negative aspects of life. Self-care skills of this nature are vital for improved clinical outcomes. Thus, the quality of life of end-stage renal disease patients is reduced in the presence of affective symptoms, which leads to poor clinical outcomes and decreased ability to face the demands of the disease and its treatment. Negative correlations between emotional disorders and quality of life domains have been widely reported. Perales Montilla et al. (16) compared the capacity of self-reported somatic symptoms and depression and anxiety for predicting quality of life among patients with chronic renal disease. Their results indicated that mood was a predictor of reductions in the physical and mental components of the SF-36, compared with the number and severity of physical symptoms. A cross-sectional study on 1,332 hemodialysis patients revealed that physical, psychological and social quality-of-life domains were negatively impacted by symptoms of depression and anxiety. In another study, depression was negatively correlated with all SF-36 scores among 105 patients undergoing peritoneal dialysis (17).

Among the dialysis patients, anxiety was associated with clinical status, as shown by the poorer scores for the physical and mental quality-of-life components, along with higher rates of comorbidities and loss of vascular access. Several factors are known to affect the prognosis and severity of anxiety and depression, such as individual characteristics, genetic load, stressful life events, concurrent mental

disorders and health status. In the present study, greater severity of depressive symptoms was associated with worse general health status and poorer nutritional status. The relationship between nutritional status and the severity of depressive symptoms needs to be appreciated from different perspectives. One potential explanation for this relationship is the negative impact of affective disorders on eating behavior. However, these disorders may be concurrent with ongoing nutritional deficits and underlying disease progression (18). The role of mental health in healthy behaviors also needs to be emphasized. This includes adequate food intake, since depression is known to interfere with eating habits and may lead to either increased or decreased appetite.⁴⁴ Additionally, depression has been positively correlated with undernourishment and poorer levels of hemoglobin, ferritin and albumin, in some end-stage renal disease studies (19).

The presence of bodily pain and less frequent participation in recreational activities were associated with greater severity of anxiety symptoms in the present study. Anxiety has been correlated with complaints of pain. Some studies have shown that patients with chronic pain had elevated levels of concern, tension and nervousness with regard to their illness and their general clinical condition, which influenced their perception of the painful experience.⁴⁹ On the other hand, states of pain, whether acute or chronic, favor psychological manifestations and become a factor in increasing the incidence of mood and anxiety disorders among these patients, compared with the general population (20). Considering that chronic kidney disease increases the risk of having pathological conditions such as diabetes mellitus, neurological conditions, bone diseases and vascular diseases, patients undergoing renal replacement therapy are more likely to experience different types of pain of variable intensity and in a variety of locations. These patients' types of pain are associated not only with their pathological condition but also with the interurrences and specificities of the renal treatment itself. A cross-sectional study on 205 patients on dialysis showed that there was higher prevalence of mental disorders among patients with moderate or severe chronic pain than among those with mild or no pain. Severe irritability and anxiousness, and inability to cope with stress, were also more common among patients with pain than among those without pain. Overall, chronic kidney disease patients participate less in recreational activities after they have started to undergo renal replacement therapies (21). Although their reduced engagement in social activities may be partly due to their clinical status, the type of renal replacement therapy also needs to be considered, as shown by the lower scores among patients undergoing dialysis (22).

A systematic review of the literature that examined studies comparing the level of engagement in activities of daily living among adult chronic kidney disease patients who underwent different types of therapy concluded that transplantation patients experienced greater levels of social inclusion, while hemodialysis and peritoneal dialysis patients did not differ significantly in this regard (23). The benefits of recreational activities for emotional wellbeing and quality of life include feelings of satisfaction, perceived freedom of choice and engagement in and expansion of social networks.

4. CONCLUSION

This literature review has been conducted in an attempt to explore the main psychosocial factors in people with chronic renal failure undergoing haemodialysis. This study revealed that depression and anxiety are common conditions among chronic kidney disease patients and that they occur more frequently among those undergoing dialysis than among those undergoing transplantation. Lower quality-of-life scores were associated with symptoms of depression in both types of renal replacement therapy. Presence of comorbidities, loss of vascular access and worse quality of life were associated with anxiety symptoms among dialysis patients, whereas none of these factors was associated with anxiety symptoms among transplantation patients.

By considering the perspectives of both the ESRD patient and the healthcare professional, it should be possible to develop interventions that are useful to patients, but feasible to implement when taking into account professional and organisational barriers. Based on the research outputs, appropriate interventions to support ESRD patients with lower-level emotional and psychological needs will be developed, implemented and evaluated in a linked follow-on study. We aim to disseminate the research findings through PPI groups involved in the work, renal peer-reviewed scientific journals, local patient and clinician workshops, and national conferences. It is apparent from this literature review that the disease and treatment related factors that restrict lifestyle and undermine QOL in people with ESRD. Psychological support to help patients cope with lifestyle restrictions and to enhance personal control through self management strategies are essential. The psychology service

needs to run concurrently with a renal counselling support service within the hospital as a means of improving services to renal patients as part of wider modernisation initiative and to create evidence base of patients needs.

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