

Impact of Psychosocial Factors on Quality of Life: A Case Study of End Stage Renal Disease

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ABSTRACT

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End-stage renal disease (ESRD) occurs when the kidneys are severely impaired. In Pakistan, the prevalence of ESRD is 37.9% among the adult population (Hashmi, 2023). This case study explores how psychosocial factors significantly impact a client with ESRD, ultimately influencing her overall quality of life (QoL). The client, F.A., a 55-year-old married female, was diagnosed with ESRD due to primary hypertension and Type I diabetes. She was referred to a trainee health psychologist for psychosocial assessment following hemodialysis. She presented with both physical and psychological complaints, including fatigue due to low hemoglobin levels, muscle cramps, difficulty breathing due to myocardial infarction (MI), irritability, anger over minor issues, automatic worrying thoughts about her condition, and restlessness. An in-depth case history interview was conducted to gather information using both informal and formal assessments. Twelve case history and intervention sessions were conducted with the client. These assessments covered various psychosocial aspects such as illness perception, health locus of control, health beliefs, perceived health status, perception of the doctor-patient relationship, perception of healthcare services, personality/life orientation, adherence to

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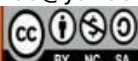
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dietary, fluid, and medication regimens, and QoL. Personality was assessed using the Ten-Item Personality Inventory (TIPI) developed by Gosling et al. (2003), and QoL was measured using the Ferrans and Powers Quality of Life Index, Generic Version-III (1995). The client scored below average on QoL as indicated by formal assessments. She appeared to be non-adherent to dietary habits, prescribed medications, and the treatment for HCV and MI. Furthermore, she exhibited negative illness perceptions, poor health status, maladaptive health beliefs, a spiritual health locus of control, and dissatisfaction with the doctor-patient relationship. The intervention plan included psychoeducation, cost-benefit analysis, coping statements, role-playing techniques, religious coping strategies for anger management, attention strategy techniques, a baseline chart for monitoring thoughts, and the ABC model of Cognitive Behavioral Therapy (CBT). The intervention plan resulted in significant improvements in addressing the psychosocial issues targeted during the sessions.

Keywords: End Stage Renal Disease, Psychosocial factors, Quality of Life

Introduction

The kidney is an important organ that filters waste from the blood, helps to maintain homeostasis, and controls many other body processes. Humans typically have two bean-shaped kidneys located below the rib cage on either side of the spine. About 150 grams and 10 to 12 cm in length constitute each kidney (National Institute of Diabetes and Digestive and Kidney Diseases, 2018). Maintaining kidney health is crucial, as reduced kidney function can lead to serious health complications (Centres for Disease Control & Prevention, 2022). The final stage of chronic kidney disease (CKD) is kidney failure, sometimes referred to as end stage renal disease (ESRD). According to Carroll and Laurence (2006), kidney failure indicates that the kidneys have stopped functioning adequately to support life without dialysis or a kidney transplant.

Prevalence & Causes of ESRD

The prevalence of ESRD is a significant global health concern. The incidence of ESRD is increasing, with estimates suggesting that around 50 patients per million population are maintained on dialysis (International Society of Nephrology, 2021). In Pakistan, the prevalence of ESRD is 37.9%

of the adult population overall, with rural and urban prevalence rate respectively of 16.4% and 21.5%. 33% of Pakistanis over the age of 45 have hypertension. According to a World Health Organization report, CKD and ESRD account for 42% of all fatalities in Pakistan (Zhang & Rothenbacher, 2008).

Worldwide, CKD affects between 8% to 16% of the population; nevertheless, both physicians and patients commonly misdiagnose the condition (Coresh et al., 2007). It is defined as having a kidney damage indicator (hematuria, anatomical anomalies like polycystic or dysplastic kidneys) that lasts longer than three months, or a glomerular filtration rate (GFR) of less than 60 mL/min/1.73 m² and albuminuria of at least 30 mg per 24 hours (Kidney Disease, 2013).

CKD is more prevalent in low- and middle-income countries than in high-income nations due to factors such as limited healthcare access and environmental exposures (Mills et al., 2015). While glomerulonephritis, infections, and environmental exposures (e.g., air pollution, air pollution, herbal medicines, and pesticides) are common in Asia, sub-Saharan Africa, and many developing nations, diabetes and hypertension are the most common causes of CKD globally (Jha et al., 2013).

Serum chemical profiles, routine screening, and urine studies are the usual means of detecting CKD. It may also be found by accident. Less frequently, people may experience symptoms such as foamy urine, which is an indication of albuminuria, reduced urine flow, nocturia, or extensive hematuria. If a patient's CKD is advanced, they may have dyspnea, pruritus, weariness, poor appetite, nausea, vomiting, metallic taste, and changes in their mental state (Skorecki et al., 2016).

Medical practitioners should inquire about any additional symptoms that may indicate a urinary obstruction (urine hesitancy, urgency, or frequency) or systemic cause (hemostasis, rash, lymphadenopathy, hearing loss, neuropathy) when evaluating a patient with a confirmed or suspected case of CKD. A patient's history of nephrolithiasis or recurrent UTIs, the presence of comorbidities (such as diabetes, hypertension, autoimmune disease, or chronic infections), a family history of kidney disease, and, if available, other known genetic risk factors like sickle cell trait should also be considered when evaluating a patient for kidney disease (Naik et al., 2014). Furthermore, patients should be assessed for possible nephrotoxins from the past, including chemotherapy, antibiotic treatments, phosphate-based bowel preparations, herbal remedies (such as aristolochic acid), non-steroidal anti-inflammatory drugs (NSAIDs), and bowel preparations.

The major causes of CKD are Hypertension, Diabetes, Non-Steroids Anti Inflammatory Drugs (NSAIDs), Acute Kidney Injury and Nephrolithiasis

(Hallan & Orth, 2010). Key risk factors for development and progression of CKD include Diabetes, Hypertension, and older age. Diabetes causes nearly 45% of incident kidney failure, and hypertension is responsible for another 20% (Kurella et al., 2005). Biological factors such as obesity, low birth weight and gender are also risk factors of CKD (Hippisley-Cox & Coupland, 2010). Furthermore, unhealthy life style such as smoking, intake of alcohol, lack of physical activity and poor diet are also significant contributing factors in the progression of CKD to ESRD (Gelber et al., 2005).

Psychosocial Impact of ESRD

Chronic ESRD patients require artificial excretion techniques to stay healthy. Patients with ESRD are therefore required to follow a range of dietary, lifestyle, and hydration restrictions in order to manage their illness. Maintaining protein, iron, and vitamin levels requires patients to do a balancing act that significantly affects their social functioning. According to Christiansen and Ehlers (2002) these restrictions may have an impact on how patients perceive their health and sense of personal control, which may lead to feelings of worry and melancholy as well as make it more difficult for them to manage and adjust.

Research indicates that psychological factors such as anger, hostility, and stress may influence the progression of CKD to ESRD (Fremont & Bird, 2000). CKD draws heavily on patient's daily functioning. The disease, treatment, and related pressures significantly impact patients' physical and emotional well-being, as well as their social functioning, ultimately reducing QoL (Gelber et al., 2005).

Kimmel et al. (1998) looked at how behavioral compliance and survival in urban hemodialysis patients were affected by psychosocial factors. Reduced treatment adherence has been associated with depression. It is widely acknowledged that depression is a prevalent psychological issue among individuals receiving hemodialysis. Compared to people with other chronic ailments, the rate of psychological problems was much greater in the ESRD patient population.

According to Chilcot et al. (2010) compared to the 16% lifetime prevalence of depression in the general population, 20 to 30% of ESRD patients experience substantial depressive symptoms. Long-term disorders can be made more difficult by depression, which may eventually make them more treatment-resistant. According to research, depressed people are three times more prone than non-depressed patients to disregard treatment suggestions (DiMatteo et al., 2000). Biochemical imbalance, physiological abnormalities, neurological disorders, cognitive decline, and sexual dysfunction are additional stressors linked to ESRD. Any of these could be involved in depression.

Review of Literature

As dialysis requires patients to make modifications to their daily routines and lifestyles for themselves and their families, it has a substantial impact on the patient's overall quality of life (QoL). Their social and economic standing, interpersonal relationships, physical well-being, and functional status are all significantly impacted at the same time (Theofilou, 2011).

The QoL of patients with ESRD is greatly influenced by a variety of psychosocial consequences. These may include coping strategies, social relationships, emotional well-being, and general mental health of patients receiving ESRD treatment. ESRD patients' QoL is impacted by a variety of psychosocial factors, which are examined in this review of the literature using data from numerous research and clinical observations.

Research indicates that depression is quite common among ESRD patients, with rates in dialysis populations ranging from 20% to 30%. Because of the chronic nature of the condition and the stress that comes with continuing treatment, anxiety disorders are also rather common. These psychological disorders have the potential to significantly reduce QoL by impacting patients' motivation, treatment compliance, and general mental health (Palmer et al., 2013).

Because of the significant stress that comes with having ESRD, patients need to develop healthy coping strategies. While maladaptive coping mechanisms such as avoidance and denial are linked to worse outcomes, adaptive coping mechanisms including asking for social assistance and overcoming problems are linked to a greater QoL (Cukor et al., 2008). The physical symptoms of ESRD and dialysis might change a person's perception about their body and themselves. According to Weisbord et al (2005) individuals frequently experience a sense of loss and lowered self-worth, which has an adverse effect on their psychological health and social relationships.

For individuals with ESRD, having social support from friends, family, and medical professionals is essential. Robust social networks can mitigate the adverse consequences of the illness by offering psychological, educational, and practical assistance that improves QoL (Griva et al., 2002). On the other hand, because dialysis treatments are challenging and ESRD patients have limited social support, many of them face social isolation. As a result of this isolation, QoL may be further reduced by anxiety and sadness (Hedayati et al., 2009). The time and physical constraints of treatment for ESRD may lead to less opportunities for employment. Patients' mental health and QoL are adversely affected by financial instability, which also increases stress (Kutner et al., 2005). According to a qualitative study by Gregory et al (2001) patients with ESRD thought they had a new sense of self. The patients' altered

emotional and psychological states suggested that they were becoming aware of their new situation, the uncertainty of their future, the demands of their disease, and their reliance on medical professionals, machines, and medication.

ESRD patients can improve their QoL by managing their anxiety and sadness with the aid of cognitive-behavioral therapy (CBT) and other therapeutic techniques. Platforms for exchanging experiences and coping mechanisms are offered by counselling services and support groups. Patients might feel more empowered by learning about their conditions and participating in their care plans, which can enhance psychosocial outcomes and treatment adherence (Devins et al., 2003). Better QoL can be achieved by addressing the full needs of ESRD patients through models that integrate medical and psychological treatment. In order to provide comprehensive treatment, these models place a strong emphasis on provider collaboration (Jablonski, 2007).

Objectives of the Study

The aim of this study was to provide a comprehensive understanding of how kidney failure affects not only physical health of the patients, but also influence their psychosocial functioning that ultimately affect overall quality of life (QoL).

Method

This case study focuses on a single patient diagnosed with end-stage renal disease (ESRD), undergoing dialysis treatment, and experiencing notable psychosocial challenges. Case history interviews were conducted to explore the different psychosocial aspects and overall QoL. Observations of patient-clinician interactions were also recorded to assess the healthcare relationship. 12 sessions has been conducted with client for the purpose of psychological intervention. All ethical considerations were kept in mind while dealing with patient. Informed consent was obtained. Privacy, confidentiality and client's autonomy was maintained.

Case Report

The Client F.A, was 55 years old married female. She was educated till graduation and was elder among 4 siblings; 3 sisters and 1 brother, lived in nuclear family system with her husband and son. She was referred to trainee health psychologist for psychological assessment as the consequences of Hemodialysis. The Client was presented with the physical complaints as she felt fatigue due to low Hb level (8.6 grams per deciliter), muscles cramps after Hemodialysis, and difficulty in breathing due to Myocardial Infarction (MI). Further she reported psychological complaints such as irritability, anger over little matters, automatic worrying thoughts regarding her condition and restlessness. The client was diagnosed with CKD at the age of 52 due to

primary hypertension and Type I diabetes, conditions for which she had a genetic predisposition. She used to feel severe pain in both kidneys but not paid attention due to lack of knowledge or education and showed non-adherence towards medication of Primary Hypertension and Type-I Diabetes. One day, client's urine was not passed adequately so her family took her to the general practitioner where she was diagnosed with CKD through Ultrasound report and prescribed medication course of 7 to 8 months. Her condition did not improve with medication, and she experienced difficulty breathing. In 2016 she suddenly felt pain in left arm and lost her senses.

Her family took her into Cardiology Hospital where doctors diagnosed her with MI as her heart rate was not stable due to narrow arteries (atherosclerosis) and CKD. They recommend Angiography or Bypass but client refused for doing any type of surgery because she was afraid of it. After using medication client's condition got worse than before. Her face and ankles were swelled. She felt excessive pain in bladder and kidneys. Her family took her into emergency ward to Shaikh Zayd Hospital where doctors diagnosed ESRD through EGFr (Estimated Glomerular Filtration rate) test and asked for immediate Hemodialysis as her both kidneys were not filtered waste products adequately. In September, 2016 her Hemodialysis was started thrice in a week base till now. After the diagnosis of ESRD she was also diagnosed with HCV and not taking any treatment at the time of interview.

Exploration of Targeted Areas

After taking detailed medical information, case history interview was conducted as informal assessment to probe the psychosocial targeted areas of the client for psychological intervention such as illness perception, health locus of control, health beliefs, perceived health status, perception of doctor-patient relationship, perception of health care services, personality/life orientation, adherence (dietary, fluid and medication), and QoL. Formal assessment was also done using Ferrans and Powers Quality of Life Index Generic Version-III (1995) and Ten Item Personality Inventory (Gosling et al., 2003).

Informal assessment revealed that she seemed to be non-adherent towards suggested dietary habits, prescribed medication and treatment of HCV or MI. Furthermore, she seemed to have negative illness perceptions, poor health status, maladaptive health beliefs, spiritual health locus of control and dissatisfied doctor-patient relationship. She found below average on QoL depicted by Ferrans and Powers Quality of Life Index Generic Version-III (1995) which showed that different psychosocial factors including negative illness perceptions, poor health status, maladaptive health beliefs, non-satisfactory patient physician relationship, pessimistic life orientation, non-adherent towards medication and dietary patterns along with spiritual locus of

control altogether caused significant impact on her overall QoL that adversely affect her physical and mental state. Moreover, client obtained high scores on introvert personality trait suggesting that people with introvert personality trait are likely to be in denial phase and did not accept or understand the severity of their chronic conditions (Pugi et al., 2022). In this case, patient reported that her illness was directly controlled by Allah and she cannot do anything.

Intervention Protocol

Insight into the importance of adhering to dietary habits, medications, and treatment for HCV and MI was developed using a cost-benefit analysis technique based on cognitive behavioral therapy (CBT). Further, insight was developed through psycho-education about the actual causal factors of ESRD as client seemed to have poor insight about it. Role playing technique was used for dissatisfied doctor-patient relationship. Coping statements were given to the client to improve the self-efficacy of client relevant to her poor health status. Psycho-education was given to the client regarding financial constraints which causing distress into the client. Counseling was given to her by maximizing the positive aspects of her life for her pessimistic life orientation. Baseline chart was provided to the client for examining the nature, intensity and frequency of her automatic worrying thoughts and deal with ABC model of CBT. Religious coping for anger management was provided as it is an important strategy that can be used to cope with stressful situations (Ano & Vasconcelles, 2005). Positive religious coping is thought to be associated with benefits in psychosocial adjustment (Pargament, 2001). Additionally, attention strategy techniques based on CBT were used to address the client's concerns about anger.

Discussion

The psychosocial factors influencing the overall QoL in patients with ESRD are multifaceted and significantly impact the well-being of these individuals. This discussion integrates the findings from various studies to provide a comprehensive understanding of how psychological, social, and economic factors interplay to affect QoL in ESRD patients. Previous literature showed that negative illness perception, maladaptive health belief, poor health status, spiritual health locus of control, dissatisfied doctor-patient relationship, and non-adherence towards medication and dietary habits are commonly found in patients with ESRD which may result poor perception of QoL (Romero et al., 2013).

The presence of depression and anxiety among ESRD patients is a critical concern. Studies indicate that these conditions are not only common but also severely debilitating, affecting patients' motivation and adherence to treatment regimens. The chronic and demanding nature of ESRD treatments, such as dialysis, contributes to these psychological burdens. Effective

management of depression and anxiety through interventions such as cognitive-behavioral therapy (CBT) can lead to improved QoL. The relationship between psychological well-being and QoL underscores the need for routine mental health screening and intervention in ESRD care (Jablonski, 2007).

Genetic predispositions and automatic worrying thoughts causing distress and anger are also the contributing factors (Fremont & Bird, 2000). Psychological or physical stress can contribute to the onset of diabetes and hypertension, impairing kidney function and increasing vulnerability to kidney diseases (Hippisley-Cox & Coupland, 2010). ESRD patients encounter considerable stress, necessitating effective coping mechanisms. Using adaptive coping mechanisms like problem-solving and reaching out to others for help is linked to improved psychological outcomes and a better quality of life.

In contrast, maladaptive strategies, including denial and avoidance, exacerbate stress and diminish QoL. Interventions aimed at improving coping skills can empower patients to manage their condition more effectively, thereby improving their overall QoL. Studies indicate that ESRD has a high comorbidity with HCV and cardiovascular disease (CVD) (Hamilton & Fagot, 2000).

HCV infection is notably prevalent in ESRD patients, particularly those undergoing hemodialysis. Studies suggest that the cases of HCV in dialysis patients range from 5% to 60%, depending on geographic region and dialysis practices. HCV infection in ESRD patients is related to increase liver-related morbidity and death rates, poor QoL and higher healthcare costs. The risk of HCV transmission in dialysis units remains a significant concern despite advancements in infection control practices (Nguyen et al., 2019).

Similarly, the incidence of CVD in this population is relatively higher compared to the general population, with studies indicating that over 50% of ESRD patients have some form of CVD (Go et al., 2004). The high rates of traditional risk factors such as hypertension, diabetes, and dyslipidemia, along with non-traditional factors like chronic inflammation and oxidative stress, contribute to this elevated risk. All of these literature findings are in line with the above mentioned case study.

Conclusion

The patient's lack of good communication with the doctor, pessimistic outlook on life, maladaptive health beliefs, and negative impression of sickness, poor health state, and high medication costs were discussed as contributing factors to the patient's poor QoL and non-adherence. This case study discovered that the ABC model, cost-benefit analysis, and other previously discussed strategies were useful for controlling these psychosocial

components, in that order. Psycho-education proved beneficial in addressing her discontent with the doctor-patient dynamic. Furthermore, she was able to change her negative life orientation by emphasizing the positive aspects of her existence.

It is concluded that psychosocial factors influencing QoL in ESRD patients are multifaceted, encompassing psychological, social, and economic dimensions. Addressing these factors through targeted interventions and support systems is crucial for enhancing the QoL of ESRD patients. Future researches should focus on developing and evaluating comprehensive care models that integrate psychosocial support with medical treatment.

References

- Ano, G. G., & Vasconcelles, E. B. (2005). Religious coping and psychological adjustment to stress: a meta-analysis. *Journal of Clinical Psychology*, 61(4):461–80. doi: 10.1002/jclp.20049.
- Carroll, & Laurence, E. (2006). The stages of chronic kidney disease and the estimated glomerular filtration rate. *Journal of Lancaster General Hospital*, 1, 64-9.
- Centers for Disease Control and Prevention. (2023). Department of Health and Human Services. Atlanta, GA: US
- Ferrans, C., & Powers, M. (1995). Quality of Life Index: Development and psychometric properties. *Advances in Nursing Science*, 8, 15-24.
- Fremont, A., & Bird, C. E. (2000). Social and psychological factors, physiological processes, and physical health. 334-352.
- Gelber, R. P., Kurth, T., Kausz, A. T., Manson, J. E., Buring, J. E., Levey, A. S., & Gaziano, J. M. (2005). Association between body mass index and CKD in apparently healthy men. *American Journal of Kidney Diseases*, 46, 871-880.
- Go, A. S., Chertow, G. M., Fan, D., McCulloch, C. E., & Hsu, C. Y. (2004). Chronic kidney disease and the risks of death, cardiovascular events, and hospitalization. *New England Journal of Medicine*, 351(13), 1296-1305. Doi: <https://doi.org/10.1056/NEJMoa041031>
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A Very Brief Measure of the Big Five Personality Domains. *Journal of Research in Personality*, 37, 504-528.
- Hallan, S. I., & Orth, S. R. (2010). The KDOQI 2002 classification of chronic kidney disease: for whom the bell tolls. *Nephrology Dialysis Transplantation*, 25, 2832-2836.
- Hamilton, S., & Fagot, B. I. (2000). Chronic stress and coping style: a comparison of male and female undergraduates. *Journal of Personality and Social Psychology*, 55, 819–23.

- Hippisley-Cox, J., & Coupland, C. (2010). Predicting the risk of Chronic Kidney Disease in Men and Women in England and Wales: prospective derivation and external validation of the kidney scores. *BMC Family Practice, 11*, 49.
- International Society of Nephrology. (2021). Retrieved from: https://www.theisn.org/membership/?gad_source=1&gclid=CjwKCAjwg-24BhBEiwA1ZOx8v7IYXIQDiNzxyYXTcdWmhJjYEx1vsT2xehe4IuKnEZ2RjY8b4U3exoCHSsQAvD_BwE
- Jablonski, A. (2007). The multidimensional characteristics of symptoms reported by patients on hemodialysis. *Nephrology Nursing Journal, 34*(1), 29-37.
- Kurella, M., Lo, J. C., & Chertow, G. M. (2005). Metabolic syndrome and the risk for chronic kidney disease among non-diabetic adults. *Journal of the American Society of Nephrology, 16*, 2134-2140.
- National Institute of Diabetes and Digestive and Kidney Diseases. (2018). Retrieved from: <https://www.niddk.nih.gov/>
- Nguyen, D., Bixler, D., & Patel, P. R. (2019). Transmission of hepatitis C virus in the dialysis setting and strategies for its prevention. *Semin Dial, 32*(2). Retrieved from: <https://pubmed.ncbi.nlm.nih.gov/articles/PMC6411055/>
- Pargament, K. I. (2001). *The psychology of religion and coping: Theory, research, practice*. Guilford Press.
- Pugi, D., Ferretti, F., Galeazzi, M., Gualtieri, G., Lorenzi, L., Pappalarado, N., Macri, P. G., Garosi, G., Coluccia, A., & Pozza, A. (2022). Health-Related Quality of Life in pre-dialysis patients with chronic kidney disease: the role of Big-Five personality traits and illness denial. *BMC Psychology, 10*(297). Retrieved from: <https://bmcp psychology.biomedcentral.com/articles/10.1186/s40359-022-00992-5>
- Romero, M., Consuelo, V. D., & Guzman, A. N. (2013). Is Health Related Quality of Life (HRQoL) a valid indicator for health systems evaluation? *Journal of Medicines, 11*.
- Zhang, Q. L., & Rothenbacher, D. (2008). Prevalence of chronic kidney disease in population based studies: systematic review. *BMC Public Health, 8*(117)