



## “ASSOCIATION OF ANXIETY AND DEPRESSION ON CHRONIC KIDNEY DISEASE PATIENTS AFFECTING QUALITY OF LIFE”

Naeem Amjad<sup>1\*</sup>, Kanza Hamid<sup>2</sup>, Ammad Ahmad Siddiqui<sup>3</sup>, Muhammad Aamir<sup>4</sup>, Muhammad Haroon Ghous<sup>5</sup>, Syeda Sabeen Fatima<sup>6</sup>,

<sup>1\*</sup>Department of Psychiatry & Behavioural Sciences, Shahida Islam Medical College, Lodhran, Pakistan

<sup>2</sup>Senior Registrar, Department of Psychiatry, Rahbar Medical College, Lahore, Pakistan

<sup>3</sup>Assistant Professor, Department of Urology, Sahara Medical College, Sughra Shafi Medical Complex, Narowal, Pakistan

<sup>4</sup>Senior Registrar, Department of Urology, Sahara Medical College, Sughra Shafi Medical Complex, Narowal, Pakistan

<sup>5</sup>Professor, Department of Urology, University College of Medicine & Dentistry, The University of Lahore, Pakistan

<sup>6</sup>Post Graduate Resident, Department of Paediatrics Medicine, Central Park Teaching Hospital, Lahore, Pakistan

**\*Corresponding Author:** Naeem Amjad

\*Email: [drnaeemamjad@gmail.com](mailto:drnaeemamjad@gmail.com), Cell:+92 333-6733422

### Abstract

**Introduction:** Chronic kidney disease (CKD) is a widespread, progressive disorder characterized by the gradual loss of kidney function over time. Affecting approximately 10% of the global population, CKD imposes a significant burden on individuals and healthcare systems alike. The condition is typically accompanied by a range of physical complications, including hypertension, anemia, bone disorders, and cardiovascular disease. However, beyond its physiological manifestations, CKD exerts a profound psychological and emotional toll on patients, profoundly influencing their quality of life (QoL).

**Objective:** To examine the relationship between anxiety, depression, and quality of life in CKD patients

**Material and Methods:** A cross-sectional study was conducted to examine the prevalence and impact of anxiety and depression on the quality of life among CKD patients. Data were collected from a representative sample of 250 individuals aged 18 years and above were recruited. Descriptive statistics, correlation analysis, and multivariate regression were used to determine the relationship between anxiety, depression, and QoL.

**Results:** There were 250 participants who included in this research after inclusion and exclusion criteria in which 140 were male and 110 were females in which 55% exhibited clinically anxiety and 45% marked as depression. Patients with higher anxiety and depression scores had significantly lower QoL scores across all dimensions. The strongest negative correlations were observed in the emotional well-being ( $-0.72$ ,  $p < 0.01$ ) and physical health ( $-0.57$ ,  $p < 0.01$ ) domains. Regression

analysis identified depression ( $p < 0.01$ ), anxiety ( $p < 0.05$ ), and lower socioeconomic status ( $p < 0.05$ ) as significant predictors of poor QoL.

**Conclusion:** The association between anxiety, depression and CKD underscores the importance of a holistic approach to patient care. Addressing mental health in CKD patients is not just about improving psychological well-being it is a critical component of enhancing overall QoL and clinical outcomes. By integrating mental health assessments and interventions into routine CKD management, healthcare providers can help patients navigate the challenges of their condition more effectively, ultimately improving their quality of life.

**Keywords:** Anxiety, Depression, Chronic Kidney disease, Quality of life, Psychological distress

## Introduction:

Chronic kidney disease (CKD) is a common progressive condition characterized by a gradual decline in kidney function over time. CKD affects approximately 10% of the world's population, placing a significant burden on both patients and healthcare systems. The disease is commonly associated with many physical complications, including hypertension, anemia, bone disease, and cardiovascular disease. However, beyond its physiological symptoms, CKD also places a significant psychological and emotional burden on patients, significantly impacting their quality of life (QoL)<sup>(1-3)</sup>.

One of the most pervasive yet under recognized aspects of CKD is the psychological distress experienced by patients. Anxiety and depression are particularly common, with prevalence rates substantially higher than those observed in the general population. These mental health conditions often arise from the chronic and uncertain nature of CKD, which necessitates ongoing medical care, dietary restrictions, frequent hospital visits and in many cases dependence on dialysis or the prospect of kidney transplantation. The psychological impact is further exacerbated by social isolation, financial strain and the stigma associated with chronic illness<sup>(4, 5)</sup>.

Anxiety in CKD patients frequently manifests as excessive worry about disease progression, fear of dependency, and apprehension about treatment modalities such as dialysis. This persistent state of heightened stress can lead to physiological changes, including elevated blood pressure and impaired immune function, further complicating disease management. Depression, characterized by persistent sadness, loss of interest in activities and feelings of hopelessness can reduce motivation, impair self-care behaviors and negatively affect adherence to treatment regimens. Together, anxiety and depression create a vicious cycle that not only worsens psychological well-being but also amplifies the physical burden of CKD<sup>(3, 6, 7)</sup>.

Quality of life (QoL) is a critical multidimensional construct that encompasses physical, emotional and social well-being. For CKD patients, QoL is often significantly diminished due to the interplay of physical symptoms, lifestyle limitations and psychological distress. Studies have consistently shown that anxiety and depression are key determinants of reduced QoL in this population. Patients with these mental health conditions are more likely to experience poorer treatment outcomes, increased rates of hospitalization, and higher mortality. Despite these profound effects, mental health concerns are frequently under diagnosed and inadequately treated in CKD care settings<sup>(8, 9)</sup>.

The importance of addressing anxiety and depression in CKD patients cannot be overstated. Recognizing and managing these psychological conditions is essential for improving patient outcomes and enhancing overall well-being. This article seeks to elucidate the complex relationship between anxiety, depression and QoL in CKD patients. By exploring the prevalence, impact and potential interventions for these mental health challenges the study underscores the necessity of a holistic approach to CKD management that integrates physical and psychological care. Such an approach has the potential to not only alleviate the emotional burden of CKD but also improve clinical outcomes and empower patients to lead more fulfilling lives<sup>(10, 11)</sup>.

## Material and Methods:

### Inclusion Criteria:

Patients at all stages of CKD and those undergoing dialysis were included.

### Exclusion Criteria:

Patients with pre-existing severe psychiatric disorders or cognitive impairments were excluded.

### Data Collection:

A cross-sectional study was conducted to examine the prevalence and impact of anxiety and depression on the quality of life among CKD patients. Data were collected from a representative sample of 250 individuals aged 18 years and above were recruited. The hospital, anxiety and depression Scale (HADS) was used to assess anxiety and depression. Kidney Disease Quality of Life Short Form (KDQOL-SF) to evaluate QoL. Socio-demographic and clinical data were collected through structured interviews.

### Results:

There were 250 participants who included in this research after inclusion and exclusion criteria in which 140 were male and 110 were females in which 55% exhibited clinically anxiety and 45% marked as depression. The mean age of the patients was  $52.5 \pm 10.5$ . The CKD patients as per staging 3/4/5 were 55(22%), 65(26%) and 130(52%) respectively in which 155(62%) on dialysis and 95(38%) marked as non dialysis. Patients with higher anxiety and depression scores had significantly lower QoL scores across all dimensions. The strongest negative correlations were observed in the emotional well-being ( $-0.72$ ,  $p < 0.01$ ) and physical health ( $-0.57$ ,  $p < 0.01$ ) domains. Regression analysis identified depression ( $p < 0.01$ ), anxiety ( $p < 0.05$ ), and lower socioeconomic status ( $p < 0.05$ ) as significant predictors of poor QoL. Patients with moderate to severe depression showed a 33% reduction in physical health scores compared to those with mild or no symptoms. Anxiety was linked to a 29% reduction in functional capacity scores among patients undergoing dialysis. Among dialysis patients, 64% reported significant anxiety, and 59% reported depression, both of which were higher compared to non-dialysis patients (30% and 38%, respectively). Dialysis patients with high psychological distress had a 20% lower QoL score in the social relationships domain. CKD patients with comorbid conditions such as diabetes and hypertension experienced higher levels of anxiety (51%) and depression (49%) compared to those without comorbidities. The presence of multiple comorbidities was associated with a further 15% reduction in overall QoL scores. Patients at stage 5 CKD (end-stage renal disease) reported significantly higher anxiety and depression levels compared to those at stages 3 and 4. Emotional well-being scores were 25% lower in stage 5 patients, highlighting the cumulative psychological burden.

## Tables

**Table 1: Demographic and Clinical Characteristics of Participants**

Variable	Frequency (%)
Age (Mean $\pm$ SD)	$52.5 \pm 10.5$
Gender (Male/Female)	140 (56%)/110 (44%)
CKD Stage (3/4/5)	55 (22%)/65 (26%)/130 (52%)
Dialysis Status (Yes/No)	155 (62%)/95 (38%)

**Table 2: Prevalence of Anxiety and Depression**

Psychological Condition	Prevalence (%)
Anxiety	55%
Depression	45%

**Table 3: Correlation between Psychological Distress and QoL Domains**

QoL Domain	Anxiety (r)	Depression (r)
Physical Health	-0.50**	-0.57**
Emotional Well-Being	-0.62**	-0.72**
Social Relationships	-0.44**	-0.48**
Functional Capacity	-0.54**	-0.57**

**Table 4: Impact of Dialysis on Psychological Distress**

Patient Group	Anxiety (%)	Depression (%)
Dialysis	64%	59%
Non-Dialysis	30%	38%

**Note:**  $p < 0.01$  indicates statistical significance.

### Discussion:

The findings highlight the profound impact of anxiety and depression on the QoL of CKD patients. The high prevalence of these psychological conditions underscores the need for routine mental health screenings in CKD management. The bidirectional relationship between psychological distress and CKD complications further emphasizes the importance of addressing mental health to improve adherence to treatment and overall outcomes. Dialysis appears to be a significant factor contributing to heightened psychological distress, necessitating targeted interventions for these patients<sup>(12, 13)</sup>.

Addressing the psychological burden of CKD requires a multifaceted approach. Beyond clinical management, healthcare providers must acknowledge the emotional and social dimensions of the disease. A combination of psychological therapies, pharmacological treatments, and lifestyle interventions can significantly mitigate the impact of anxiety and depression. Additionally, integrating mental health support into routine nephrology care can lead to better patient outcomes and improved QoL<sup>(14, 15)</sup>.

This study also highlights the importance of tailoring interventions to specific patient groups. For example, dialysis patients and those with multiple comorbidities may require more intensive psychological and social support. Further research is needed to explore the long-term benefits of such integrated approaches and to identify barriers to effective mental health care in CKD settings<sup>(16, 17)</sup>.

### Implications:

The high prevalence of anxiety and depression among CKD patients highlights the need for routine mental health screenings in nephrology clinics.

Screening tools like the Hospital Anxiety and Depression Scale (HADS) should be integrated into regular CKD management to detect psychological distress early.

Patients with higher psychological distress, such as those on dialysis or in advanced CKD stages, require tailored mental health support.

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National and international nephrology guidelines should incorporate recommendations for the assessment and management of anxiety and depression in CKD patients.

Patients and caregivers should be educated about the signs of anxiety and depression and their impact on CKD management and QoL.

Providing resources for self-help strategies, such as relaxation techniques and support groups, can empower patients.

### Limitations:

Longitudinal studies are needed to understand the progression and interplay of these factors over time.

A limited sample size may reduce the generalizability of findings to the broader CKD population, especially across diverse demographic and clinical settings.

Participants often come from a single or limited number of healthcare centers, which may not represent the broader CKD population, especially in rural or underserved areas.

Socioeconomic factors such as income, education, and access to healthcare were included in some studies but may not have been fully accounted for, impacting the outcomes.

### **Conclusion:**

The association between anxiety, depression, and quality of life (QoL) in chronic kidney disease (CKD) patients underscores the critical need for a holistic approach to patient care. This study highlights the high prevalence of psychological distress in CKD patients, particularly those undergoing dialysis or at advanced disease stages, and its profound impact on physical, emotional, and social well-being. Anxiety and depression not only reduce QoL but also exacerbate disease progression, impair treatment adherence, and increase morbidity and mortality.

Addressing mental health in CKD management is no longer optional but essential. Routine screening for anxiety and depression, integration of mental health professionals into nephrology care teams, and the development of targeted psychological and pharmacological interventions are pivotal steps toward improving patient outcomes. Tailored care plans that consider socioeconomic factors, comorbidities, and stage-specific challenges can further enhance treatment efficacy and QoL.

Ultimately, a multidisciplinary approach that prioritizes both physical and mental health is vital for CKD patients. By recognizing and addressing the psychological challenges faced by this population, healthcare providers can empower patients, reduce disease burden, and improve overall well-being. This research underscores the urgency of bridging the gap between mental and physical healthcare to foster a more comprehensive and compassionate care model for CKD patients.

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