

## PSYCHOLOGICAL IMPACT OF CHRONIC KIDNEY DISEASE ON PATIENTS UNDERGOING DIALYSIS AND THE SUPPORTIVE ROLE OF NURSES

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### Abstract

**Background:** Chronic Kidney Disease (CKD) necessitates life-sustaining dialysis, a treatment associated with significant psychological burden, including anxiety, depression, and stress. Nurses are uniquely positioned to provide essential psychosocial support, yet the specific impact and their supportive role require further evaluation in diverse clinical settings.

**Aim:** This study aimed to assess the psychological impact of CKD on patients undergoing dialysis and to evaluate the supportive role of nurses in addressing these needs at a public hospital in Malakand.

**Methods:** A descriptive cross-sectional study was conducted with 218 dialysis patients at SGTH Swat. Data were collected via a structured questionnaire assessing psychological impact (anxiety, depression, stress) and perceived nurse support. Analysis employed descriptive and inferential statistics using SPSS version 27.

**Results:** Participants reported moderate to high levels of psychological distress, with anxiety and lifestyle frustration being most prominent. Over half experienced moderate distress, and one-third reported severe distress. Perception of nurse support was generally positive, especially for communication and respectful care. A significant negative correlation was found between perceived nurse support and psychological distress ( $r = -0.42, p < 0.001$ ).

**Conclusion:** CKD patients on dialysis experience substantial psychological distress. Supportive nursing care, particularly effective communication and emotional support, plays a protective role. The findings underscore the necessity of integrating structured psychological assessments and strengthening nurses' psychosocial competencies into routine dialysis care to improve patient well-being.

### Introduction

Chronic Kidney Disease (CKD) is a progressive condition characterized by gradual loss of kidney function. Dialysis is a medical intervention used to replace kidney function in patients with end-stage

renal disease. [1] Psychological impact refers to the emotional, cognitive, and behavioral responses experienced by patients facing chronic illness. [2] Nurses' supportive role includes providing emotional, informational, and practical assistance

to patients. Supportive care encompasses counseling, health education, stress management, and promoting coping strategies. CKD affects physical, social, and mental well-being. Understanding psychological responses is crucial for improving patient outcomes. [3]

CKD is becoming a common disease in the global society with millions of people contracting it every year. Patients who are under dialysis have a lot of emotional stress, anxiety and depression. Dialysis patients are high in the prevalence of psychological disorders. [4]. Research indicates that mental illnesses adversely affect the quality of life and adherence to treatment. The patients with CKD have their stress and emotional distress escalated by socioeconomic factors. Psychological burden leads to augmented hospitalization and death. Mental health assessment is necessary in dialysis. It is important to note that nurses are important in the identification and correction of these challenges. [5].

Dialysis patients have anxiety on treatment schedules and connection procedures of the vascular access. Concern with needle insertion, machine malfunction, and complications is an emotionally disturbing factor. Unpredictability in the prognosis raises the anxiety levels. Regular visits to hospitals come in between normal lives and socializing. [4]. Dietary and fluid restrictions may be minimized by anxiety. Psychological distress may be enhanced by physical symptoms of CKD. Nurses offer emotional support and reassurance as a way of eliminating anxiety. Open communication between patients and nurses encourages the feeling of security. [6].

Depressions are frequent among patients under dialysis. Sensations of desperation, depression, and lack of enthusiasm about things are common. The depression impacts motivation in self-care and treatment adherence. Social and family support can be restricted because of emotional withdrawal. In the nursing care, symptoms of depression are observed by nurses. [7]. Early diagnosis permits referral to mental practitioners. Supportive interventions and counseling are used to aid the mood. Psychological support improves the quality of life and involvement in treatment by the patient. [8]

Lifestyle limitations given to patients are reported to cause stress. Frustration is caused by dietary restrictions, fluid restrictions and medication regimens. Restrictions affect societal performances and normal operations. The stress level is enhanced when the patients lose the ability to work or be independent. Education about lifestyle change is done by nurses. Some of the coping strategies are relaxation, problem-solving, and time management. Positive instructions decrease stress. Patients also gain empowerment when the nurses engage them in decisions. [9].

Some dialysis patients experience changes in thinking. There are problems in concentration, loss of memory and lack of problem-solving skills. Cognitive impairment is used in comprehension of treatment plans. The patients might not comply with complicated dosing schedules. Nurses evaluate cognitive functioning on a regular basis. Instructions and reminders are simplified to help understand. Adherence is enhanced through patient education and reinforcing. Cognition monitoring is a safer and more effective way of dialysis care. [10].

Much sleep disturbance is often witnessed among dialysis patients. There is insomnia, awakenings, and restless leg syndrome. Sleep difficulties worsen sleepiness and emotional instability. Sleep deprivation has adverse physical and psychological health effects. Patients are informed of sleep hygiene and relaxation by nurses. Scheduling of dialysis can enhance the quality of sleep. Interventions aimed at sleep improve general well-being. Nurses observe the sleeping patterns as part of the holistic care. [11].

The fear of addiction and the loss of independence is also high among CKD patients. Dependence on the dialysis machines and health practitioners brings anxiety. Patients also fear to overburden the family members. The loss of independence impacts on identity and self-esteem. Nurses promote self-management as much as they can. Patients should be empowered to be part of care, which will decrease the fear. The impartation of skills on everyday activities encourages independence. Emotional support strengthens the belief of the patients in themselves [12].

Dialysis patients are characterized by social isolation. The social interactions are restricted by hospital visits, treatment schedules. The patients can also lack a sense of connection to the family, friends and community. The social isolation elevates the exposure to depression and anxiety. Nurses determine the social needs and promote interaction with support groups. Isolation is also minimized through peer support and community resources. The emotional well being is boosted through communication with the family. Social interaction is enhanced by the structured activities. [13]

Identity concerns may arise because of treatment and vascular access effects on patients. There are fistulas, catheters, and physical changes that influence self-perception. Social participation is decreased by embarrassment and self-consciousness. [14]. Nurses do counseling on body image and self-esteem. The process of education regarding changes of the treatment normalizes experience. The supportive interventions assist the patients to deal with physical changes. Confidence is enhanced by positive reinforcement. The intervention of body image facilitates psychological resilience. [15]

The studies concerning the psychological effect of CKD indicate the multi-faceted patient experience. Several contributory factors exist and cause emotional and mental health challenges. The intervention of nurses reduces the adverse outcomes of dialysis. Research highlights the necessity of multifaceted nursing care, which would involve psychological and social needs. It is essential to evaluate the knowledge and interventions of the nurses. The supportive strategies enhance the patient outcomes. Comprehensive treatment that incorporates psychological support is an added value to dialysis.

### Methodology

A descriptive cross-sectional study design was employed to assess the psychological impact of chronic kidney disease (CKD) on patients undergoing hemodialysis and to evaluate the supportive role of nurses. The study was conducted at Saidu Teaching Hospital (SGTH), Swat, a tertiary care public hospital with a

dedicated dialysis unit providing hemodialysis services to patients with CKD. The hospital caters to a large and diverse population from Swat and neighboring districts, making it an appropriate setting for examining psychological issues and nursing support among dialysis patients.

The study population comprised adult patients aged 18 years and above who were diagnosed with CKD and had been receiving hemodialysis for at least three months. Patients who were able to read or understand the questionnaire and were willing to participate were included in the study. Patients with diagnosed psychiatric disorders unrelated to CKD, those in critical or unstable conditions, and individuals unwilling to participate were excluded. The sample size was calculated using the OpenEpi online calculator, applying a finite population correction formula. Based on a total population of 500 dialysis patients, a 95% confidence level, 5% margin of error, and 50% anticipated frequency, a sample size of 218 participants was determined. A non-probability convenience sampling technique was used to recruit eligible participants.

### Data Collection Procedure

Formal permission was obtained from the administration of Saidu Teaching Hospital and the head of the Dialysis Unit prior to data collection. Eligible patients were approached during their scheduled dialysis sessions. The purpose and objectives of the study were explained in detail, and written informed consent was obtained from all participants. Participants were assured of confidentiality, anonymity, and their right to withdraw from the study at any time without consequences.

Data were collected using a structured questionnaire administered through face-to-face interviews by the researcher or trained research assistants. This approach ensured clarity of questions and facilitated participation, particularly for patients with limited literacy. Adequate time was provided to complete the questionnaire, and assistance was offered when required. Completed questionnaires were reviewed immediately to ensure completeness and accuracy. Data collection was carried out over a period of four to six weeks until the required sample size was achieved.

### Data Analysis Procedure

Collected data were coded and entered into the Statistical Package for the Social Sciences (SPSS) version 27 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics, psychological impact levels, and perceptions of the nurse supportive role. Inferential statistics were applied to examine relationships between variables. Chi-square tests were used to assess associations between categorical variables, while Pearson's correlation coefficient was employed to analyze relationships between continuous variables. Statistical significance was set at  $p < 0.05$ , and results were

presented using tables and graphical formats for clear interpretation.

### Results and Analysis

#### Demographic Analysis

Table 1 presents the demographic profile of 218 dialysis patients, showing a predominance of middle-aged adults, with most falling between 31–60 years. Males accounted for a greater proportion of participants compared to females. A majority were married and had varying educational backgrounds, with primary and secondary education being most common. The duration of CKD varied, though most had been living with the condition for 1–3 years. Similarly, many patients had been on dialysis for more than 12 months and received dialysis three times per week.

**Table 1. Demographic Characteristics of Dialysis Patients (n = 218)**

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–30	32	14.7
	31–45	74	33.9
	46–60	80	36.7
	Above 60	32	14.7
Gender	Male	136	62.4
	Female	82	37.6
Marital Status	Single	48	22.0
	Married	150	68.8
	Widowed	14	6.4
	Divorced	6	2.8
Education Level	No formal education	54	24.8
	Primary	62	28.4
	Secondary	58	26.6
	Graduate	32	14.7
	Postgraduate	12	5.5
Duration of CKD (years)	≤ 1 year	40	18.3
	1–3 years	94	43.1
	> 3 years	84	38.5
Months on Dialysis	3–6 months	56	25.7
	7–12 months	62	28.4
	>12 months	100	45.9
Dialysis Frequency / week	1–2 times	60	27.5
	3 times	144	66.1
	> 3 times	14	6.4

**Table 2. Psychological Impact Among CKD Patients (n = 218)**

Psychological Variable	Mean Score	SD	Interpretation
Anxiety	3.74	0.92	Moderate-High
Depression	3.58	1.01	Moderate
Stress related to dialysis	3.82	0.88	High
Hopelessness	3.40	1.03	Moderate
Sleep disturbance	3.66	0.96	Moderate-High
Fear of being a burden	3.72	0.91	Moderate-High
Lifestyle frustration	3.89	0.85	High
Nervousness before dialysis	3.55	0.98	Moderate

**Figure 1. Levels of Psychological Distress Categories (n = 218)**

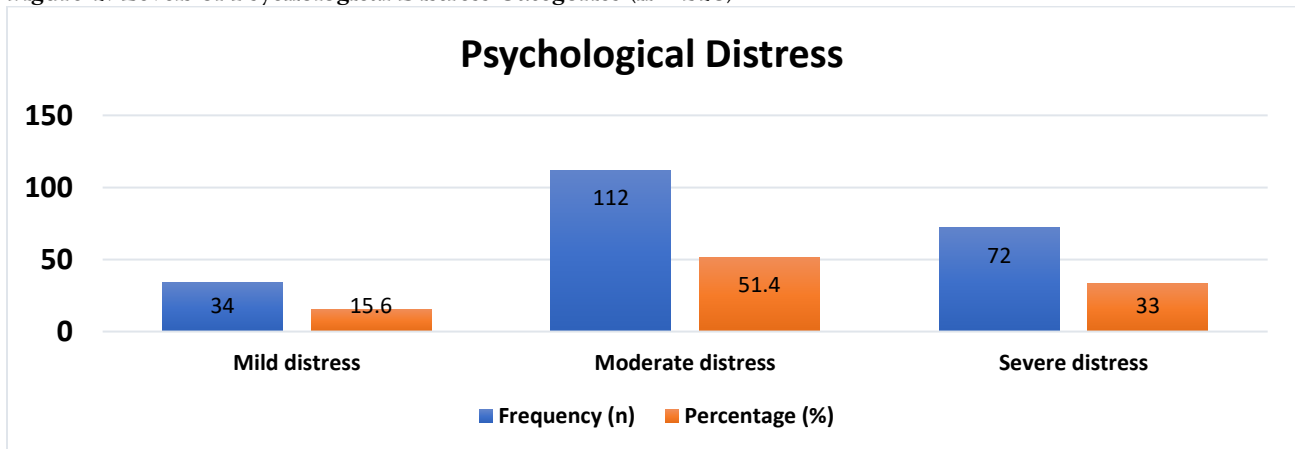


Figure 1 categorizes psychological distress into mild, moderate, and severe levels among the study participants. Over half of the patients fell within the moderate distress category, indicating a substantial emotional burden. One-third experienced severe distress, highlighting a high-risk segment needing psychological interventions. Only a minority reported mild distress, demonstrating that emotional challenges are common in CKD. These findings underscore the need for routine psychological assessment in dialysis units.



Table 3 illustrates patients' perceptions of the supportive role of nurses, with most indicators rated moderate-to-very-high. Clear explanation of procedures and respectful, caring behavior received the highest scores, showing strong satisfaction with these aspects. Emotional support, prompt responses, and coping guidance were also rated positively but somewhat lower. Stress management support received the lowest mean score, indicating an area for improvement. Overall, the table reflects a generally positive perception of nursing care.

**Table 3. Perception of Nurse Supportive Role (n = 218)**

Supportive Role Indicator	Mean Score	SD	Interpretation
Emotional support provided	3.98	0.82	High
Clear explanation of procedures	4.12	0.78	High
Prompt response to concerns	3.86	0.90	High
Encouraging expression of feelings	3.75	0.94	Moderate-High
Guidance on coping with CKD	3.69	0.88	Moderate-High
Respectful and caring behavior	4.20	0.74	Very High
Stress management support	3.60	0.92	Moderate

Table 4 displays coping strategies used by patients, showing high reliance on family support, relaxation or prayer, and seeking information about their illness. Talking to nurses and engaging in distraction activities were moderately used coping mechanisms. The results indicate that

patients draw heavily on social and spiritual resources for emotional stability. Higher scores for information-seeking suggest a desire for control and understanding of their condition. This table highlights the multidimensional nature of coping in CKD.

**Table 4. Coping and Emotional Well-Being Scores (n = 218)**

Coping Indicator	Mean Score	SD	Interpretation
Talking to nurses about concerns	3.21	1.02	Moderate
Support from family/friends	4.01	0.87	High
Use of relaxation/prayer	4.12	0.79	High
Distraction activities during dialysis	3.44	0.96	Moderate
Seeking information about illness	3.89	0.84	High

Table 5 reports the chi-square test assessing the association between gender and psychological distress levels. The analysis yielded a statistically significant relationship ( $p = 0.014$ ), indicating that distress levels differ by gender. This suggests gender-specific psychological needs among dialysis

patients. The chi-square value supports the presence of a meaningful variation between male and female distress categories. These findings warrant tailored interventions considering gender differences.

**Table 5. Association Between Gender and Psychological Distress (Chi-Square Test)**

Variable	$\chi^2$ value	df	p-value	Interpretation
Gender × Psychological Distress Level	8.52	2	0.014	Significant association

Table 6 presents the correlation between psychological impact and perceived nurse support, showing a moderate negative correlation ( $r = -0.42$ ). This means higher nurse support is associated with lower psychological distress among patients. The p-value ( $<0.001$ ) confirms statistical

significance. The pattern indicates that supportive nursing care plays an important protective role in emotional well-being. This finding reinforces the need to strengthen nurse-patient communication and psychosocial care.

**Table 6. Correlation Between Psychological Impact and Nurse Support (Pearson's r)**

Variables	Pearson r	p-value	Interpretation
Psychological Impact × Perceived Nurse Support	-0.42	$<0.001$	Moderate negative correlation (higher support → lower distress)

## Discussion

The results of this study show that the majority of dialysis patients were middle-aged, mainly men, and married, which is consistent with the other studies that revealed that more men are exposed to hypertension and cardiovascular risks, which result in higher CKD and dialysis rates [16]. In other studies, the situation was similar in Pakistan,

India, and Saudi Arabia, and this means that CKD affects adults at the time of their working age inappropriately [3]. Both the length of CKD and chronic suffering of dialysis were consistent with previous literature, which supports the chronic and progressive character of renal disease [17]. There were also moderate to high scores on psychological impact which is comparable with the

previous studies that report high rates of anxiety, stress, and depression among dialysis patients [18]. The fact that anxiety and lifestyles frustration are the most scores also coincides with the results of Chilcot et al., who found out that restrictions associated with dialysis have substantial negative effects on psychological well-being [19]. Other studies in the region also found that fear of complications, dependence on treatment, and doubt about the prognosis were also significant causes of distress [20]. Nonetheless, this research had a moderately low level of depression rates than some of the Western populations perhaps because of the family support systems that were stronger in South Asian cultures as opposed to the other cross-cultural studies [21].

The psychological distress levels distribution did show that most of the patients were moderate in the levels of distress and a third of the patients were severely distressed. These findings can be compared with the results of Abdel-Kader et al. who have found out that over 60 percent of dialysis patients experience emotional distress [22]. It was found to have similar proportions in Iranian and Turkish studies [23]. Nevertheless, the relative lack of moderate distress in this study compares to Western cohort where more patients report fewer levels of distress, which may be due to the variations in socioeconomic stressor, access to health care, and coping resources [24].

The perception of the patients towards the nurse support was mostly favorable especially when it comes to the respectful communication and understandable explanation of the procedure. This is in line with the international researches that point out that therapeutic communication and compassionate behavior can hugely enhance patient satisfaction [25]. The average results in the area of emotional support and stress management are similar to the results obtained by Chan et al., who pointed out that nurses frequently have difficulties in offering psychosocial assistance because of job load and time constraints [16]. The reduced score in stress-management support indicates a mismatch to that found in many of the Asian dialysis units, in which psychosocial intervention is not fully integrated in the regular care [26].

Family support, religious beliefs, and trying to make sense of their illness were to the core of coping strategies among the patients. Such findings are similar to findings in South Asia and Middle East, where spirituality and family support are fundamental coping mechanisms. The trend of information-seeking behaviors was evident in the study as it demonstrates the growing tendency presented by Lin et al., who reported that the desire of the patients to become active participants in their care is growing [27]. The moderate level of nurse-based coping support and practices is in contrast to the results of Western countries where the structured counseling is more widely accessible [28].

The high level of correlation between gender and psychological distress is similar to the earlier studies indicating that female patients have a higher rate of distress because they are vulnerable to biological, hormonal, and sociocultural issues [29]. Other comparable gender differences are recorded in dialysis patients in Asia, Europe, and the United States. Nevertheless, other East Asian studies found that no significant gender differences existed, which indicated contextual differences in coping resources and medical attendance. These ambivalent results underscore the need to have culturally sensitive and gender responsive psychological support interventions.

The adverse relationship between nurse support and psychological distress supports the protective function of supportive nursing care that is in line with an increasing amount of evidence that brings to the fore the role of the nurse in promoting mental health among dialysis patients. Strength of the moderate correlation is similar to the outcomes of recent meta-analysis stating that nurse-led support leads to a reduction of anxiety, higher adherence, and better quality of life in CKD [30]. However, in contrast, some studies also established weaker relationships (particularly in the understaffed environment or with limited psychosocial training of nurses) [31]. Altogether, the results indicate the necessity to improve communication, counseling, and psychosocial competences of dialysis nursing practice.

**CONCLUSION:**

This analysis showed that chronic kidney disease and life long dialysis has significant psychological effect on the patients with majority of them suffering moderate to severe degrees of distress. Nervousness, tension around the treatment schedules, and dietary restrictions were evident, and the emotional issue of CKD was exposed. Patients were overall positive about the nursing support, especially the communication, respect and clarity of the procedure, but weaknesses were found in the aspects regarding the stress-management guidance. The cultural and social context of the population was mainly based on the coping strategies, which centered on family support, spirituality, and information-seeking. The high correlation over gender and distress justified gender-sensitive psychosocial intervention and the negative correlation between nurse support and psychological impact explained the critical protective effect of nursing care. All in all, the correlations demonstrate the need to combine thoughtful use of psychological assessment, the improvement of the nurse-patient dialogue, and the customization of the psychosocial assistance into the everyday dialysis routine to enhance the quality of life and patient well-being.

**6.2. RECOMMENDATIONS OF THE STUDY:**

Based on the findings, several recommendations are proposed to improve the psychological well-being and overall care of dialysis patients:

1. **Integrate Routine Psychological Screening:** Dialysis units should implement regular assessments for anxiety, depression, and overall psychological distress to identify high-risk patients and provide timely interventions.
2. **Enhance Nurse Training in Psychosocial Care:** Nurses should receive ongoing training in communication, counseling, stress-management techniques, and culturally sensitive psychological support to strengthen their role in patient well-being.
3. **Develop Structured Psychosocial Support Programs:** Hospitals should introduce counseling sessions, peer-support groups, and

stress-reduction workshops tailored specifically for dialysis patients.

4. **Implement Gender-Responsive Interventions:** Since psychological distress varied by gender, targeted programs addressing specific needs of male and female patients should be incorporated into care plans.
5. **Strengthen Family Involvement:** Given the reliance on family support, educational sessions for family members should be conducted to equip them with skills to assist patients emotionally and practically.
6. **Promote Patient Education and Information-Seeking:** Providing accessible, easy-to-understand educational materials and regular informational sessions can empower patients to better understand and manage their condition.
7. **Enhance Stress-Management Support:** Dialysis units should integrate relaxation techniques, mindfulness sessions, or spiritual care services to address gaps identified in stress-management support.
8. **Collaborate with Mental Health Professionals:** Establishing referral pathways with psychologists, psychiatrists, or social workers can ensure comprehensive multidisciplinary care.
9. **Improve Staffing and Time Allocation:** Adequate staffing levels should be ensured to allow nurses sufficient time to provide both clinical and emotional care to patients.
10. **Conduct Further Research:** Future studies should explore additional psychosocial variables, include larger sample sizes, and compare outcomes across different dialysis centers for broader generalizability.

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