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# Refusal of Hemodialysis by Hospitalized Chronic Kidney Disease Patients in Dera Ismail Khan Pakistan

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## ABSTRACT

**Background:** Chronic kidney disease (CKD) is an important global public health issue and emerging non communicable disease that occurs more often in developing countries where few patients have access to renal replacement therapy and has a high burden of symptomatic illness. **Methods:** This descriptive cross-sectional study was performed Between September 2025 and February 2026, in the nephrology department of District Headquarters Teaching Hospital of Dera Ismail Khan Pakistan. A total 100 of hospitalized patients aged between 18 -80 years with CKD stage V and medical indication for the hemodialysis were recruited using successive sampling. Data were collected using a pre-tested structured questionnaire regarding clinical characteristics, utilization of healthcare services in the past, demography and acceptance of hemodialysis. **Results:** Out of 100 patients, 34% refused hemodialysis while 66% accepted treatment. Among those who refused, the mean age was 45.03 ± 7.08 years, with a slight female predominance (52.9%). Most patients were uneducated (67.6%) and belonged to lower socioeconomic class (67.6%). Family members were the primary decision-makers in 67.6% of cases. The most common reasons for refusal were fear of the dialysis procedure (88.2%), perceived poor quality of life (44.1%), financial constraints (29.4%), and influence of family or peers (26.5%). Clinical parameters indicated advanced disease at presentation. **Conclusion:** Refusal to hemodialysis is widespread and complex, mostly motivated by societal pressures, fear, and financial obstacles. Improved access to subsidized dialysis treatments, early counselling, and patient education are crucial for increasing treatment acceptability and lowering avoidable death.

## INTRODUCTION

An increasing global public health concern, chronic kidney disease (CKD) disproportionately affects developing countries, where access to renal replacement therapy is restricted and severe illness is more common. (1) An estimated 13.4% of people worldwide have chronic kidney disease (CKD), with greater rates seen in low- and middle-income nations where early detection initiatives are still insufficient. (2) For survival, end-stage renal disease (ESRD), the last stage of chronic kidney disease (CKD), necessitates renal replacement therapy in the form of hemodialysis, peritoneal dialysis, or kidney transplantation. (3)

According to community-based screening studies, the prevalence of chronic kidney disease (CKD) in Pakistan ranges from 16.6% to 25%, however most patients arrive at Stage V, when irreparable kidney damage has already taken place. (4) Due to a lack of transplantation facilities and the higher expense of peritoneal dialysis, haemodialysis continues to be the most widely used renal replacement therapy in Pakistan, with over 95% of dialysis-dependent patients choosing this modality. (5) For patients with no remaining renal function, the Kidney Disease Outcomes Quality Initiative (KDOQI) suggests dialysis three times a week to improve outcomes and lower mortality.(6) However, in undeveloped nations, compliance with this advice is still lacking. Alarmingly high refusal rates have been reported in several Pakistani studies. 67.3% of patients who showed up for their first dialysis session declined the procedure, citing fear as the main reason (76%), followed by a preference for spiritual or alternative therapies (14%). Shafi et al. discovered that 42.4% of hospitalised patients with chronic kidney disease (CKD) who had medical indications for hemodialysis declined treatment, with the most frequent explanations being the permanent and lifelong nature of dialysis (50.9%), the frequency of sessions (52.8%), and the perception of a poor quality of life on dialysis (35.8%).(7)

Haemodialysis was more common among patients in middle-class or higher-income groups and those with an arteriovenous fistula in place. (8)

the most often cited socioeconomic and healthcare-related reasons for declining thrice-weekly dialysis were low income (69.5%), transportation issues (68.5%), and the lack of dialysis facilities (66.2%) the first three months had the highest death rate (21.4% vs. 41.5%). Decisional regret and dialysis refusal are becoming more widely acknowledged as important problems in nephrology care on a global scale. According to Pawar et al. the prevalence of decisional regret among dialysis patients ranges from 7% to 61%. (9) This can be attributed to a number of variables, such as a lack of autonomy, poor planning, and a poor comprehension of the dialysis process .While patients with low regret showed positivity, self-compassion, and integration of dialysis into their identity, those with high regret showed resignation toward dialysis, disturbance of their sense of self and social duties, and self-blame.(10)

The World Health Organization states that socioeconomic, therapy-related, patient-related, condition-related, and healthcare system variables all influence treatment adherence. non-compliance is brought on by antagonistic patient-clinician interactions, a lack of trust, and a failure to recognize patient knowledge. They argued for concordant partnerships that respect patients' experienced expertise. (11)

The district of Dera Ismail Khan in Pakistan's Khyber Pakhtunkhwa province is an underprivileged area with few dialysis facilities and nephrology services. Hemodialysis acceptance decisions may be influenced by the distinct cultural, social, and geographic features of this community, such as tribal customs, rural living, and a lack of healthcare infrastructure. Nevertheless, there isn't any published data that particularly looks at refusal rates and related variables in this demographic. Developing focused educational initiatives, enhancing pre-dialysis counselling, and eventually lowering avoidable death among CKD patients in this underprivileged area all depend on an understanding of these characteristics.

### Aim & Objectives

The objective of this study is to determine the frequency of acceptance and refusal of HD by hospitalized advanced CKD patients with medical indications to undergo HD.

In addition, we aim to identify reasons and patients' characteristics associated with their respective decisions.

## MATERIAL & METHODS

This descriptive cross-sectional study was carried out in the nephrology department of the District Headquarters Teaching Hospital (DHQTH) in Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan. The study was conducted from [1st Sep, 2025 –28th Feb, 2026] for a duration of six months. An Ethical approval from institutional Review Board was granted with No. 398/GJMS/JC.

In the southern areas of Khyber Pakhtunkhwa, comprising Dera Ismail Khan, Tank, South Waziristan, and portions of Dera Ghazi Khan, the study setting, DHQTH Dera Ismail Khan, is a tertiary care public sector hospital that serves a primarily rural population. For qualified patients, the nephrology department offers both inpatient and outpatient renal care, including maintenance hemodialysis. For this underprivileged area with little specialised nephrology services, the hospital acts as the main referral facility. All hospitalised patients between the ages of 18-80 who had been diagnosed with CKD Stage V (estimated glomerular filtration rate < 15 mL/min/1.73 m2) and who had medical indications for starting renal replacement therapy (hemodialysis) as determined by an attending nephrologist made up the target population. Dialysis was indicated for uremic pericarditis, uremic encephalopathy, refractory fluid overload, refractory hyperkalaemia, severe metabolic acidosis (serum bicarbonate < 15 mEq/L), or prolonged uremia-related nausea and vomiting. The study excluded patients who had acute renal injury, were already receiving maintenance haemodialysis, had terminal cancer, had a history of mental illness, such as dementia, delirium, or active psychosis, or were incapable of giving informed consent. The WHO sample size calculator version 1.1 was used to determine the sample size of 100 patients with a 95% confidence interval, 10% absolute precision, and an expected population proportion of 50% for haemodialysis refusal based on earlier research conducted in Pakistan.(7) All eligible patients who met the inclusion criteria and were admitted to the nephrology department during the study period were contacted for participation using a non-probability consecutive sampling technique until the desired sample size of 100 was reached.

The questionnaire was created following a comprehensive analysis of the literature on hemodialysis refusal in Pakistani and foreign populations. The questionnaire was divided into four sections: (1) demographics (age, gender, marital status, education level, employment status, monthly family income, and residence); (2) clinical variables (cause of CKD, duration since diagnosis, comorbid conditions like hypertension and diabetes mellitus, laboratory parameters at presentation like serum creatinine, blood urea, haemoglobin, serum potassium, and serum albumin, and presence of arteriovenous fistula); (3) prior healthcare utilisation (including homoeopathic, herbal, or spiritual treatments) and (4) explanations for accepting or rejecting haemodialysis. Additionally, there was an open-ended question on the questionnaire that allowed patients to provide more details on causes not addressed in the structured topics. Following a thorough description of the study's goals, methods, possible dangers, and advantages, each participant provided written informed permission. Confidentiality and the freedom to leave the study at any moment without having an impact on their medical care were guaranteed to the participants. Data were analyzed using SPSS version 23. Continuous variables were presented as mean ± standard deviation, while categorical variables were expressed as frequencies and percentages. A purely descriptive analysis was performed among patients who refused hemodialysis.

## RESULTS

In this study duration total of 100 patients presented of CKD. Of them, 34 patients (34%) declined hemodialysis, whereas 66 patients (66%) accepted the treatment.

**Table 1**
*Demographic, Socioeconomic, and Prior Care Related Characteristics of Study Population(n=34)*

| | | Factors mean ± SD |
|---|---|---|
| Age | | 45.03 ± 7.082 |
| | | Frequency (%) |
| Gender | Male | 16(47.1%) |
| | Female | 18(52.9%) |
| Education level | Uneducated | 23(67.6%) |
| | Primary education | 11(32.4%) |
| Decision by | family | 23(67.6%) |
| | patient | 11(32.4%) |
| Comorbid conditions | Hypertension | 15(44.1%) |
| | Diabetes mellitus | 11(32.4%) |
| | Hypertention+Diabetes Mellitis | 4(11.8%) |
| | Cardiovascular disease | 2(5.9%) |
| | Chronic liver disease | 2(5.9%) |
| Income class | Lower class | 23(67.6%) |
| | Middle | 10(29.4%) |
| | higher class | 1(2.9%) |
| Hemodialysis advised before | Yes | 7(20.6%) |
| | No | 27(79.4%) |
| Decision by | Family | 23(67.6%) |
| | Patient | 11(32.4%) |

The demographic, socioeconomic, and prior care-related features of the 34 patients who declined haemodialysis are shown in Table 1. These patients were 45.03 ± 7.08 years old on average. In terms of gender distribution, 18 (52.9%) were female and 16 (47.1%) were male. Eleven (32.4%) were educated, whereas the bulk 23 (67.6%) were not. In 23 cases (67.6%), family members declined dialysis; in 11 cases (32.4%), the patient made the decision. The most prevalent comorbid condition was hypertension 15 (44.1%), followed by diabetes mellitus 11 (32.4%). Two patients (5.9%) each had chronic liver disease and cardiovascular disease, while four patients (11.8%) had both diabetes mellitus and hypertension. In terms of socioeconomic level, ten patients (29.4%) belonged to the middle class and twenty-three patients (67.6%) to the lower income class. Of the patients, 7 (20.6%) said they had previously received advice to begin haemodialysis, while 27 (79.4%) had not.

**Table 2**
*Showing Continuous Variables of the patients (n = 100).*

| | Factor Mean±SD |
|---|---|
| 1 Pulse (per min) | 83.21±9.42 |
| 2 Systolic BP (mmhg) | 144.24±28.71 |
| 3 Diastolic BP (mmhg) | 86.75±15.99 |
| 4 Hb (gm/dl) | 8.06±1.89 |
| 5 Urea (mg/dl) | 191.59±67.75 |
| 6 Creatinine (mg/dl) | 11.13±4.67 |
| 7 Albumin (gm/dl) | 3.69±0.56 |
| 8 Serum Sodium (mmol/l) | 134.0±8.09 |
| 9 Serum Potassium (mmol/l) | 4.87±0.91 |
| 10 Serum Calcium (mg/dl) | 7.74±1.80 |
| 11 Serum Phosphorus (mg/dl) | 4.8±2.48 |

The continuous clinical characteristics of the 34 patients who declined haemodialysis are compiled in Table 2. The average heart rate was 83.21 ± 9.42 beats per minute. The average systolic and diastolic blood pressure readings were 144.24 ± 28.71 mmHg and 86.75 ± 15.99 mmHg, respectively.

The mean haemoglobin level in terms of laboratory parameters was 8.06 ± 1.89 g/dL. The average levels of creatinine and blood urea were 11.13 ± 4.67 mg/dL and 191.59 ± 67.75 mg/dL, respectively. 3.69 ± 0.56 g/dL was the average serum albumin level.

The average levels of sodium, potassium, calcium, and phosphorus were 134.0 ± 8.09 mmol/L, 4.87 ± 0.91 mmol/L, 7.74 ± 1.80 mg/dL, and 4.8 ± 2.48 mg/dL, respectively.

**TABLE 3**
*Causes of Refusal of Dialysis.*

| | Frequency | % |
|---|---|---|
| Fear of Dialysis Procedure | 30 | 88.2% |
| Fear of death with hemodialysis | 5 | 14.7% |
| Spiritual / Alternative Medicine | 4 | 11.8% |
| Non-availability of Nearby Dialysis Centre | 6 | 17.6% |
| Unable to afford hemodialysis | 10 | 29.4% |
| Fear of hemodialysis catheter | 8 | 23.5% |
| Fear of AV fistula needles | 5 | 14.7% |
| Adverse outcomes in friends or family members with hemodialysis | 4 | 11.8% |
| Permanent and lifelong hemodialysis is unacceptable | 5 | 14.7% |
| Frequency of hemodialysis per week is unacceptable | 5 | 14.7% |
| Poor health and functional status of patient | 3 | 8.8% |
| Old age of patient | 6 | 17.6 |
| Perception of poor quality of life on hemodialysis | 15 | 44.1% |
| Fear of complications on hemodialysis | 8 | 23.5% |
| Advised by family member or friend not to do hemodialysis | 9 | 26.5% |
| Patient desires second opinion | 7 | 20.6% |
| Patient desires to undergo preemptive kidney transplant | 3 | 8.8% |

Table 3 presents the reasons for refusal of hemodialysis among the 34 patients who declined the treatment. The most frequently cited reason was fear of the dialysis procedure, reported by 30 patients (88.2%). This was followed by perception of poor quality of life on hemodialysis, noted by 15 patients (44.1%).

Other notable reasons included inability to afford hemodialysis (10, 29.4%), advised by a family member or friend not to undergo hemodialysis (9, 26.5%), and fear of hemodialysis catheter (8, 23.5%) as well as fear of complications on hemodialysis (8, 23.5%).

Patient desire for a second opinion was reported by 7 patients (20.6%). Additional factors included non-availability of a nearby dialysis centre (6, 17.6%), old age of the patient (6, 17.6%), fear of death with hemodialysis (5, 14.7%), fear of AV fistula needles (5, 14.7%), permanent and lifelong hemodialysis being unacceptable (5, 14.7%), and frequency of hemodialysis per week being unacceptable (5, 14.7%).

Less common reasons were spiritual/alternative medicine (4, 11.8%), adverse outcomes in friends or family members with hemodialysis (4, 11.8%), poor health and functional status of the patient (3, 8.8%), and desire to undergo pre-emptive kidney transplant (3, 8.8%).

## DISCUSSION

In Pakistan's Khyber Pakhtunkhwa province, the district of

Dera Ismail Khan is a poor area with minimal nephrology and dialysis facilities. The unique cultural, sociological, and geographic characteristics of this community such as tribal customs, rural life, and a lack of healthcare infrastructure may have an impact on judgments about hemodialysis acceptance. However, no published data specifically examines rejection rates and associated factors in this population. Understanding these traits is essential to creating targeted educational programs, improving pre-dialysis counselling, and ultimately reducing preventable mortality among CKD patients in this impoverished location. This study aims to ascertain the prevalence of HD acceptance and rejection among hospitalized advanced chronic kidney disease patients who have medical reasons for HD.

In this study, 34% of patients with end-stage renal disease (ESRD) refused hemodialysis. This result is consistent with earlier data from Pakistan, where refusal rates have been reported to range from 22% to 41%. In developing nations, where the prevalence of chronic kidney disease (CKD) is rapidly increasing, the significant percentage of patients declining a life-sustaining treatment emphasises the critical need to comprehend the underlying factors influencing this decision. (12)

Patients who declined dialysis had a mean age of 45.03 ± 7.08 years, which is significantly younger than the average dialysis population in wealthy nations. This implies that refusal in our group cannot be explained by age alone. Instead, the prevalence of patients from lower socioeconomic classes (67.6%) and those without formal education (67.6%) suggests that socioeconomic hurdles are crucial. These results are consistent with the global epidemiology of chronic kidney disease (CKD), which disproportionately affects underprivileged populations in underdeveloped countries. The frequency of chronic kidney disease (CKD) is rising in Pakistan, yet there are still few healthcare resources available, and many households cannot afford the out-of-pocket costs of dialysis. (13)

With mean blood urea of 191.59 ± 67.75 mg/dL and creatinine of 11.13 ± 4.67 mg/dL, the clinical profile of individuals who declined dialysis indicates advanced kidney disease. Severe anaemia, a typical consequence of advanced chronic kidney disease (CKD), is indicated by a mean hemoglobin of 8.06 ± 1.89 g/dL. According to these laboratory results, the majority of patients appeared later in the course of their illness, possibly as a result of ignorance, limited access to primary care, or a delayed referral to nephrologists a issue that has been previously reported in Pakistan. (14)

Fear of the dialysis process was the most frequent reason for rejection (88.2%), followed by the belief that hemodialysis would result in a lower quality of life (44.1%). These results align with previous research conducted in Pakistan. Shafi et al. discovered that among the most common reasons hospitalised CKD patients refused hemodialysis were fear of needles, dread of pain, and a sense of poor quality of life. Fear of the operation and worries about a lower quality of life were also noted by as major obstacles to embracing dialysis three times a week. and fear of the dialysis procedure was the main reason given by 61% of refusers.(7) (15)

In our study, there was a significant anxiety of vascular access procedures: 23.5% of participants were afraid of hemodialysis catheters, and 14.7% were afraid of AV fistula needles. This is consistent with the previous results that vascular access problems and fear of needling were important predictors of refusal. Similarly, patients' decision to forego kidney transplantation as a renal replacement therapy was influenced by their worries about the discomfort and inconvenience of vascular access. (16)

29.4% of our patients reported not being able to pay for hemodialysis, which reflects the financial reality of Pakistani healthcare. the monthly cost of dialysis frequently surpasses the household income of lower and middle-class families, and they highlighted financial restrictions as the primary cause for refusal. According to Shafi et al., 35% of those who declined haemodialysis in their study did so primarily due to financial difficulties.(7) Cost was indicated as a key barrier by 72% of refusers, underscoring the urgent need for subsidised dialysis programs in developing nations. (17)

Notable in our findings were worries about burdening family members and getting counsel from others to decline dialysis. In 67.6% of cases, family members decided to decline. This aligns with earlier research conducted in Pakistan. rejection decisions were frequently influenced by family members and lacked patient autonomy.(2) families frequently opted against dialysis because of financial limitations, transportation issues, or the conviction that the patient's poor functional state would not improve. Patients frequently deferred medical decisions to family elders, especially in rural and lower-income households. (18) It's interesting to note that a comparable percentage of our patients wanted a preventative kidney transplant, and 11.8% of them claimed spiritual or alternative medicine as a rationale for denial. (19)

According to Shafi et al., several patients declined biological treatment because they expressed hope for cure through traditional healers or prayers. A small percentage of patients declined dialysis in favour of alternative therapy, some patients would have preferred transplantation over dialysis but were unable to do so due to a lack of funds or donors.(7) (20) The significant percentage of concomitant diabetes mellitus (32.4%) and hypertension (44.1%) among refusers is in line with the recognised epidemiology of CKD in Pakistan, where these two disorders account for the bulk of ESRD cases . (21)

Patients who resist dialysis typically have poor outcomes. Following patients who declined hemodialysis, discovered that the majority of them passed away within six months, with uremic complications being the leading cause of mortality. This emphasises how serious rejection decisions are. Nonetheless, following information and counselling, some individuals who first reject treatment could eventually agree to it. Research from around the world has shown that some people who begin dialysis subsequently regret their choice, while others who opt for conservative care without dialysis may enjoy a respectable quality of life if given the right support. These results emphasise the significance of collaborative decision-making that provides accurate prognostic information

while respecting patient choices. (20) (21) (22)

**Limitations**

Generalisability to other Pakistani populations is limited by the single-center design and somewhat small sample size. The cross-sectional design makes it impossible to determine whether individuals who declined dialysis eventually suffered negative consequences or eventually changed their minds. Furthermore, replies on the grounds for refusal might have been influenced by social desirability bias.

## CONCLUSION

In this study, 34% of hospitalized patients with advanced chronic kidney disease refused hemodialysis despite having clear medical indications for renal replacement therapy. Refusal was more common among patients from lower socioeconomic backgrounds (67.6%), those without formal education (67.6%), and in cases where treatment decisions were primarily made by family members (67.6%). The leading reasons for refusal included fear of the dialysis procedure (88.2%), perceived poor quality of life on hemodialysis (44.1%), financial constraints (29.4%), and discouragement by family members or peers (26.5%). These findings highlight the major influence of socioeconomic barriers, inadequate patient awareness, and psychosocial factors on dialysis acceptance. Early nephrology counseling, culturally sensitive patient education, and expansion of subsidized dialysis services may improve acceptance of life-saving hemodialysis and help reduce preventable morbidity and mortality among CKD patients in underserved regions of Pakistan.

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