

Survey of Practicing Nephrologists in Pakistan: Peritoneal Dialysis Preferences and Reasons for Not Practicing Peritoneal Dialysis

Ahad Qayyum¹, Muhammad Anees², Muhammad Mohsin Riaz³, Abad ur Rehman⁴, Wardah Riaz¹,

¹Department of Nephrology, Bahria International Hospital, Lahore, Pakistan.

²Department of Nephrology, Mayo Hospital, Lahore, Pakistan.

³Department of Nephrology, Ali Fatima Hospital, Lahore, Pakistan.

⁴Department of Nephrology, Lahore General Hospital, Lahore, Pakistan.

Abstract

Background: Peritoneal dialysis (PD) remains underutilized in Pakistan despite being an established, cost-effective renal replacement therapy. This survey evaluated PD practice rates, regional variations, and specific barriers among Pakistani nephrologists domestically and abroad.

Methods: A cross-sectional nationwide survey was conducted among practicing Pakistani nephrologists. Respondent data were analyzed for geographic distribution, current PD practice, and reasons for non-adoption. Statistical comparisons were performed using Fisher's exact test and Chi-square (χ^2) analysis ($\alpha = 0.05$).

Results: Out of 151 respondents ($n = 142$ in Pakistan, $n = 9$ overseas), only 38.41% (58/151) actively practice PD. Expatriate nephrologists had significantly higher PD uptake than domestic nephrologists (77.78% vs. 35.92%, $p = 0.0276$). Within Pakistan, significant provincial disparities were observed ($p = 0.0344$), with higher practice rates in KPK (45.71%) and Punjab (42.86%) compared to Sindh (18.52%) and ICT (11.11%). Primary barriers cited by non-practicing nephrologists ($n = 91$) included inadequate nursing/technical training (67.03%), lack of surgical support for catheter insertion (62.64%), PD fluid supply issues (59.34%), patient financial burden (54.95%), and physician need for retraining (52.75%).

Conclusion: PD utilization in Pakistan is severely constrained by structural, educational, and supply-chain bottlenecks. Establishing dedicated interventional training, nursing certification, and national fluid subsidies is critical to achieving PD expansion.

Keywords:

Peritoneal dialysis, Barriers, nursing, care givers, training, dialysate, health care cost, governmental support.

Corresponding Author :

Dr. Ahad Qayyum FCPS (Neph),
Nephrology Department,
Bahria International Hospital, Lahore, Pakistan
drahadqayyum@gmail.com

DOI: 10.53778/pjkd103380

Received 22 Sep 2026 and accepted 26 Sep 2026

PJKD 2026;10(3):39-42

Introduction

End-stage kidney disease (ESKD) presents a growing health burden in Pakistan due to various reasons.¹ Hemodialysis (HD) remains the predominant modality of renal replacement therapy due to centralized dialysis infrastructure.² Peritoneal dialysis (PD), offers equivalent survival outcomes, better preservation of residual renal function, and greater independence for patients living far from

urban centers.³ Despite global initiatives advocating for "PD-first" policies, PD implementation in Pakistan remains disproportionately low.⁴ This survey assesses current practice patterns among Pakistani nephrologists and categorizes systemic obstacles hindering PD expansion.

Methods

Study Design & Sampling: A cross-sectional survey was administered to practicing nephrologists across public, private, and academic centers in Pakistan, alongside expatriate Pakistani nephrologists.

Statistical Analysis: Quantitative variables were summarized as counts and percentages. Comparisons of binary proportion outcomes across regions were evaluated using Chi-square (χ^2) tests for independence, and Fisher's exact tests for low-count subgroups. Analysis was performed using SciPy and Pandas statistical libraries ($p < 0.05$ considered statistically significant).

Results

A total of 151 nephrologists completed the survey (142 domestic across 33 cities; 9 overseas). Overall, 38.41% (58/151) reported actively offering PD in their clinical practice, Table 1.

Pakistani nephrologists working abroad demonstrated a markedly higher likelihood of practicing PD compared to those operating domestically (77.78% vs. 35.92%; OR = 6.25, $p = 0.0276$). Within Pakistan, PD practice varied significantly by province ($\chi^2 = 8.643$, $p = 0.0344$).

Table 1: Regional Peritoneal Dialysis Practice Rates in Pakistan ($n = 142$)

Region / Province	Active PD (n)	Total Nephrologists (N)	Practice Rate (%)
Khyber Pakhtunkhwa (KPK)	16	35	45.71%
Punjab	27	63	42.86%
Balochistan	2	5	40.00%
Sindh	5	27	18.52%
Islamabad Capital Territory (ICT)	1	9	11.11%
Azad Jammu & Kashmir / GB	0	3	0.00%
Total Domestic	51	142	35.92%

Major urban centers demonstrated stark contrasts: Lahore (62.50%, 20/32) and Peshawar (57.69%, 15/26) maintained robust PD programs, whereas Karachi (22.73%, 5/22) and Islamabad (11.11%, 1/9) reported lower engagement.

More than 60% nephrologists reported to have exposure to PD during their educational journey, Table 2. Major concern was the lack of trained paramedical staff including nurses, technicians and

technologists. Supply chain maintenance of the fluids, cost and placement of PD catheters was also a major issue noted as a hindrance of PD penetration.

Table 2: Reported Barriers Among Non-Practicing Domestic Nephrologists ($n = 91$)

Barrier Domain	Identified Issue	Frequency (n)	Percentage (%)
Nursing Infrastructure	Lack of trained dialysis nurses & technicians	61	67.03%
Interventional Support	Lack of catheter insertion support (Surgical / Interventional)	57	62.64%
Supply Chain	Inconsistent PD fluid availability	54	59.34%
Economic	Out-of-pocket costs & patient financial burden	50	54.95%
Physician Training	Need for nephrologist retraining & refresher workshops	48	52.75%
Reimbursement	Absence of financial incentives for physicians/hospitals	38	41.76%
Educational Exposure	Lack of prior clinical exposure during residency	35	38.46%

Discussion

These findings demonstrate that PD adoption in Pakistan is restricted primarily by institutional deficits rather than clinical reluctance. Since Peritoneal dialysis is improving in its acceptability as a home based therapy overseas Pakistani nephrologists adopt PD at double the domestic rate (77.78% vs 35.92%).⁵ The recent trend is however encouraging with a sharp increase in the enrolment of patients in the PD programs across Pakistan. It therefore also suggests that it is the individual practice philosophy that counts to overcome these barriers.

Globally the limitations of introducing PD when compared to the cost and patient benefits are matched, a clear picture emerges. This has led to the firm statement “PD offers a cost-effective and viable option to expand ESKD services in LMIC countries. Experiences around the world and from international organizations can provide guidance concerning the establishment of PD programs from a medical and economic standpoint” .⁶ The primary limitation identified is the paucity of trained nursing personnel (67.03%) and catheter placement services (62.64%). In centers where interventional nephrology or dedicated surgical support exists (e.g., specific institutions in Lahore and Peshawar), PD practice rates exceed 55%. Conversely, major metropolitan areas like Karachi and Islamabad experience low PD uptake due to established hemodialysis infrastructure and fluid logistics hurdles.

Addressing these barriers requires a four-pillar approach:

1. **Interventional Nephrology Training and Improving the skills and understanding of the surgical colleagues:** Establishing hands-on percutaneous and laproscopic workshops and webinars for PD catheter placement. It is important to know that majority of the catheters do not require a surgical placement and nephrologists have to take the lead in improving the skills and placement of PD catheter.
2. **Nursing Certification:** Developing standardized PD training modules for allied health staff across teaching centers. Indus hospital Karachi has already established a program of certification and similar programs can be established across the country.
3. **Supply Chain Normalization:** Local PD fluid manufacturing to reduce costs and secure inventory against import disruptions.
4. **Reimbursement Parity:** Aligning government health card reimbursement rates for PD with standard hemodialysis packages as well as developing PD centers by the nephrologists and reimbursement plans for the nephrologists to overcome the financial impact of services to reimbursement.

Conclusion:

In conclusion, the future for PD is bright with the interest and response shown by the nephrologists in Pakistan with >60% nephrologists now having exposure to PD in their training program. Addressing catheter placement and nursing training is the main concern and other issues can be resolved gradually.

Conflict of interest: None declared

References

1. Imtiaz S, Alam Ashar. Epidemiology and demography of chronic kidney disease in Pakistan- A review of Pakistani literature. *Pak J Kidney Dis* 2023;7(1):2-7
2. Abraham G, Varughese S, Nishanth S, et al. Peritoneal dialysis in South Asia: Challenges and opportunities. *Perit Dial Int*. 2017;37(6):608-614.
3. Li PK, Chow KM, Van de Luijngaarden MW, et al. Changes in the worldwide epidemiology of peritoneal dialysis. *Nat Rev Nephrol*. 2017;13(2):90-103.
4. Qayyum A. Peritoneal Dialysis in Pakistan : An insider' s view. State of affairs and planning? *Pak J Kidney Dis* 2020;4(Suppl 1):6-10.
5. Qayyum A, Saeed F, Riaz MM, Imtiaz S, Anjum R, Jauhar M et al. Peritoneal dialysis in Pakistan: Getting out of second gear: An update on PD utilization in Pakistan by the peritoneal dialysis working group of Pakistan Society of Nephrology. *Pak J Kidney Dis* 2026;10(2):3-13.
6. Finkelstein FO, Khan Q. Peritoneal dialysis utilization globally and opportunities in lower income countries. *Pak J Kidney Dis* 2020;4(Suppl 1):3-5.