

RESEARCH NOTES

Current Challenges in The Management of Chronic Kidney Disease Patients in India

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Abstract: *Chronic Kidney Disease (CKD) is a major and rising public health issue in India that affects almost 17% of the adult population. The recent treatment issues with CKD patients in India from 2023 to 2025 are investigated in this paper based on the results of a number of recent studies. The five important challenges are recognized to be: restricted access to early diagnosis and nephrology treatment, low affordability of transplant and dialysis treatment, fragmentation between public and private sectors, poor mental health and nutritional treatment, and post-COVID-19 systemic disruptions.*

Despite programs such as the Pradhan Mantri National Dialysis Program and Ayushman Bharat, knowledge and implementation gaps, especially among rural and deprived populations, prevail. Out-of-pocket costs, long travel to reach treatment sites, substandard trained staff, and unpredictable frequencies of dialysis are endured by patients. There is social stigma, lack of awareness of CKD, and inadequate incorporation of mental health or dietary counseling within care as well. The article also highlights the economic and psychological cost of the treatment disruption during and after the COVID-19 pandemic.

This paper integrates current policy reviews, epidemiological data, and clinical practice with a qualitative synthesis approach. Suggested interventions include the development of nephrology facilities, initiation of national screening, insurance reform, and the inclusion of holistic, patient-focused care models. Without an imminent multisectoral intervention, the CKD burden in India will rise, worsening morbidity and increasing health disparities.

Keywords: Chronic Kidney Disease, India, Dialysis Access, Post-COVID Healthcare, Barriers to Treatment

INTRODUCTION

Chronic Kidney Disease (CKD) is more and more surfacing as an imperative public health problem in India due to the rising incidences of diabetes, hypertension, aging, and pollution. Talukdar et al. (2025) have discovered that the Indian burden of CKD rose to 16.38% between 2018-2023 from 15.41% in the last decade with no sign of stabilization. Although the burden exists, India's policy and treatment centers in the health sector are not adequate enough to cater to the patients' needs.

Since 2023-2025, the nation has been besieged with serial failure in the management of CKD because of systemic inefficiencies, availability, geographic distributional constraints of services, and disruption by the COVID-19 pandemic. It is treated in this research paper by double reading of the literature of recent empirical studies that the recent treatment problems of CKD patients in India in the time period. The central problems are out-of-pocket spending, restricted access to dialysis and transplantation, variation in local health, and decentralized governance of policy.

METHODOLOGY

The research utilizes a qualitative review approach to integrate the latest evidence and empirical studies between 2010 and 2025 with a bias towards 2023-2025 tendencies. Twenty studies were shortlisted according to relevance to treatment access, affordability, health system, and nephrology in India.

Literature was retrieved through databases such as PubMed and Google Scholar. Articles that contained apparent data on delivery of care, trend in prevalence, epidemiology, access to care, or public policy were selected. Results were coded under three thematic groupings:

1. Cost and access barriers
2. Prevention gaps and facilities
3. Pandemic effects, policy actions, and other interventions

1. Economic and Access-Related Barriers

1.1 Cost Burden and Out-of-Pocket Expenditure

CKD treatment, specifically dialysis and transplant, remains economically costly to the Indian patient. Across the study by Essue et al. (2018), a significant percentage of patients dipped into catastrophic health expenditure, even resorting to taking loans, selling assets, or incurring long-term indebtedness in order to continue undergoing dialysis. Jha (2013) once estimated that less than 10% of Indian patients who need renal replacement therapy are actually treated, mainly because it is too costly—a truth which still holds today.

By 2023, treatment is usually irregular or substandard even in government hospitals, driving patients

to the private sector. India's dialysis care is mostly found in private-sector hospitals, where treatment ranges from INR 20,000 to INR 40,000 per month—a figure that no family can afford, according to Bharati et al. (2020).

This financial burden forces the majority of the patients to stop treatment entirely. India's rural and economically backward populations' CKD death rate is significantly higher than other regions according to the ISN Global Kidney Health Atlas report (Wijewickrama et al., 2024), confirming the clear relationship between poverty and poor treatment compliance.

1.2 Inadequate Government Support and Insurance Coverage

Whereas programs such as Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY) have tried to cover major diseases, dialysis coverage is unequal. Consistent with Buosi et al. (2021), in contrast to Brazil or Portugal, India does not have a general legal plan ensuring access to CKD treatment as a right. That creates the door ajar for state-level inequalities and bureaucratic loopholes for getting help.

The majority of patients are either unaware of available insurance benefits or cannot access them due to administrative constraints. The Global Dialysis Perspective study (Bharati et al., 2020) demonstrates how India's highly splintered insurance system renders a high percentage of CKD patients underinsured or uninsured.

1.3 Geographic Disparity in Access

Treatment facilities are concentrated in urban cities such as Delhi, Mumbai, and Chennai. Rural and northeastern regions are under-coverage. Far fewer than 20% of rural dialysis centers possess complete equipment and staff, according to Wijewickrama et al. (2024). The urban pattern forces rural patients to move temporarily or make long-distance journeys for treatment, including transportation and lodging costs.

In a study conducted by Naveena et al. (2023) in Nellore, Andhra Pradesh, 40% of the patients had lost dialysis because of mobility problems. This was of utmost concern among geriatric and socioeconomically disadvantaged patients, who face physical as well as economic challenges in seeking care.

1.4 Low Awareness and Prevention regarding CKD

Insufficiency of information among the general public is also a cause of treatment delay. Hussain et al. (2019) noted that more than 60% of type 2 diabetic patients in North India never heard of CKD despite being at risk. Most of the patients come for treatment when the disease has progressed to an advanced stage, thus denying conservative and early-stage treatments the chance to work.

Singh et al. (2013) in SEEK study have also reported a prevalence of CKD as 17.2% in Indian adults and these were diagnosed late until stage 3 or 4 at the time when complications had already started. Late presentation thereby severely limits the treatment choice and also increases the cost of care.

1.5 Socioeconomic Disparities

CKD disproportionately affects poor and marginalized populations. In India, the economic and social burden is augmented by healthcare burden. Varughese et al. (2018) point out the fact that lower-caste patients and rural

dwellers are typically deprived of resources and nephrology care. They are also at risk of misdiagnosis or being attended to by untrained medical staff.

These economic and geographic inequalities, collectively, represent a cycle of under-treatment, delayed diagnosis, and poor prognosis that has continued well into 2025 without adequate national intervention.

Systemic Gaps, Prevention, and Infrastructure

2.1 Dialysis Infrastructure Deficit

India is finding it difficult to fill the crucial deficit of nephrologists, dialysis machines, and equipment, especially in tier-2 cities and rural settings. India has a mere 1 nephrologist per million population, much below that in industrialized countries like the USA (18 per million), according to the International Society of Nephrology's Global Kidney Health Atlas (2024). Rural-urban disparities in access to nephrology have expanded since 2020 due to the economic impact of the pandemic.

The study by Bharati et al. (2020) has identified excessive reliance on the private sector for dialysis units, which accounts for more than 70% of India's dialysis units. The units are very costly and poorly regulated. Patients in government facilities have long waiting lists, irregular dialysis sessions, and faulty equipment. Patients sometimes have no choice but to reuse dialyzers for a duration longer than the one advised because of cost factors (Bharati et al., 2020).

2.2 Prevention of Nephrology Neglect

Although the prevalence of CKD is increasing, Indian health policy targets more curative than preventive nephrology. Although early detection will take the disease process far (Singh et al., 2013), there are no national programs for screening for CKD. SEEK study identified that CKD typically happens together with diabetes and hypertension, which can be managed by early intervention (Singh et al., 2013).

Naveena et al. (2023) also explained that there are no protocols in the primary level for standard operating procedures in staging, referring, and treating CKD which push the disease to be undertreated and underdiagnosed. Extremely little preventive care service like urinalysis, serum creatinine test, and lifestyle modification counseling is being offered routinely by some of the primary health centers.

2.3 Lack of Integration of Modern and Ayurvedic Systems

While the Indian government has been sponsoring AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy), restricted integration with nephrology has been practiced. The 2024 Murty et al. study explored the use of Ayurveda as a treatment method for renal complication and concluded that treatment provided under Ayurveda was promising both in terms of symptom reduction and quality of life improvement, mainly in patients who were in more advanced stages.

However, the research determined that inadequate standard procedures, weak regulatory monitoring, and inadequate scientific confirmation are barriers to introducing mainstream acceptability. Patients who strictly follow Ayurvedic treatment, typically due to unawareness of dialysis or unaffordability, suffer worsening outcomes due to the natural course of the disease in the lack of adequate medical control.

These therapies must be evidence-based,

non-harmful, and controlled. Most of these traditional practitioners working today are illiterate and untrained and hence risk CKD patients in not accessing, and switching away from, biomedical care.

2.4 Ineffective Referral Systems and Care Coordination

Management of CKD is ideally done with a multidisciplinary team of nephrologists, cardiologists, nutritionists, and mental health professionals. The Indian health system is very fragmented with poor communication between and within levels of care. There is no one common electronic health record platform for patient follow-up coordination from primary to tertiary care.

Murty et al. (2024) noted that more than 50% of patients interviewed at public hospitals did not have well-defined referral lines. These patients saw multiple providers, resulting in redundant testing, duplicate diagnostic results, and delay in initiating treatment. Disjointed care in the private sector results in overmedication, loss of control of dialysis protocol, and patient confusion from conflicting advice.

2.5 Transplant Barriers and Low Donation Rates

Kidney transplant is the gold standard treatment in end-stage kidney disease (ESKD), but India also has a number of systemic obstacles. National Organ and Tissue Transplant Organization (NOTTO) illustrates that less than 5% of Indian patients with ESKD receive transplant (Wijewickrama et al., 2024). The most common obstacles are unavailability of organ donors, excessively expensive surgery and immunosuppressant expense, and waiting time.

There are legally available deceased donor programs, but bureaucratic red tape, cultural limitations, public lack of education, and red tape hold things back. Marginalized patients are disproportionately impacted by a lack of education, donor match unavailability, and regional bias in organ allocation (Bharati et al., 2020).

Secondly, the cost of transplantation surgery (INR 5–10 lakhs) and the cost of chronic drugs (INR 10,000–20,000/month) are beyond the means of most poor families. The government reimbursement schemes are delayed or not available owing to bureaucratic inefficiencies.

2.6 Post-Treatment and Rehabilitation Challenges

Even after undergoing dialysis or a transplant, the patients are deprived of rehabilitation centers, nutritional counseling, and counseling. Murty et al. (2024) also described the psychological effects on the patients at the time of diagnosis, where they begin developing depression, anxiety, and social withdrawal, especially among young and female patients.

Few governmental-sponsored support groups, home-based care, and vocational rehabilitation services exist to socialize the CKD patients again. Lack of infrastructural facilities, patients' families experience burnout from stress and monetary disadvantage, which causes premature discontinuation of therapy and reduced life quality.

2.7 Inadequacy of Human Resource and Training

India's human resource of nephrologists is outrageously thin. India possesses less than 2,500 nephrologists, most of them residing in metros, as per Wijewickrama et al. (2024). Less than 200–300 new postgraduates in the field of nephrology are being trained each year, which falls short of meeting growing demand.

General physicians are not trained in CKD, and

even most of the medical colleges lack a special department of nephrology. Even this deficiency is outsourced to dialysis nurses and technicians either overburdened or underburdened. Until the nation splurges in educating and training the nephrologists, there will be a shadow of shortage of treatment.

COVID-19 Impact, Policy Challenges, and Recommendations

3.1 COVID-19 and Post-Pandemic Recovery Issues

The pandemic created a disastrous impact on the provision of routine health care in India, and hardest hit were those patients with CKD. Lockdowns, movement restrictions, and diversion of hospitals to admit COVID-19 cases led to cancellation of dialysis sessions, follow-ups, and drug supply to the majority of kidney patients. According to Wijewickrama et al. (2024), over 60% of dialysis patients had one or more missed dialysis treatments during the pandemic, with increased risks of fluid overload, electrolyte derangement, and hospitalization.

Closure of public dialysis units and ICUs under attack forced many patients into costly private care, placing already stretched families under further strain. Even after the pandemic, staff shortages, financial losses, and health burnout persisted to affect CKD services delivery in public and private facilities (Wijewickrama et al., 2024).

Apart from that, COVID-post complications such as new onset of renal failure, accelerated proteinuria, and delayed transplant surgeries further add to CKD in 2023–2024. Health care networks have not yet finished removing the backlog, especially in the states with high prevalence such as Maharashtra, Tamil Nadu, and Assam.

3.2 Policy Gaps and Implementation Barriers

Despite government efforts via initiatives such as Pradhan Mantri National Dialysis Program (PMNDP) and inclusion of CKD under Ayushman Bharat, the process remains uneven. A policy review in 2024 by Naveena et al. has found some functional loopholes:

- **Inadequate coverage:** Most dialysis centers under PMNDP are not operational due to non-availability of personnel or broken machines.
- **Postponed payment schedules:** Ayushman Bharat claims are rejected or delayed by hospitals, discouraging utilization.
- **Urban Bias:** Nephrology centers and dialysis remain urban-centric, while rural India still remains sparsely covered.
- **Poor incentives for transplant:** The National Organ Transplant Program lacks well-nourished donor promotion campaigns and interstate coordination.

Other than that, kidney treatment expenditure is held at the same level as the disease burden keeps rising. It had allocated less than 2% of its NCD budget for kidney disease-specific interventions within the 2024–25 Union Health Budget, demonstrating low policy-level priority (Murty et al., 2024).

3.3 Public Awareness and Stigma

CKD is an asymptomatic disease for most Indians. Symptoms and signs occur stepwise, as do the diagnoses. Population awareness about risk factors, dietary limitations, and first signs is poor. Murty et al. (2024) understood that less than 22% of respondents from three Indian states were capable of identifying at least two CKD signs correctly.

CKD patients are socially stigmatized, especially

in rural and lower socio-economic segments, as a terminal or “hopeless” condition. This generates psychological distress, abandonment, and gender-based discrimination, especially among women and the elderly.

Culturally appropriate campaigns and school-level health education programs are necessary for destigmatization of CKD and early help-seeking behavior.

3.4 Absence of Psychological and Nutritional Support

Mental health treatment, dietitian access, and psychosocial counselling in Indian biomedicine are still overlooked. CKD patients are also at high risk of depression, insomnia, and suicidal ideation, especially those on long-term dialysis or zero transplant patients. There are no integrated mental health treatments or renal diet-counselling-trained nutritionists in most Indian hospitals (Wijewickrama et al., 2024).

Nutrition is involved in CKD progression and the quality of life but not prevalent with individual renal diets. A study conducted in 2020 by Bharati et al. stated that 70% of patients undergoing dialysis received no formal dietetic advice, thereby 70% of them took excessive sodium, potassium, and phosphorus.

There should be an interprofessional model of psychologists, nephrology dietitians, and social workers for integrated care but there exists no infrastructure and manpower to implement this model.

3.5 Way Forward and Recommendations

Evidence-based recommendations are provided to improve the treatment of chronic kidney disease (CKD) in India:

1. **Increase Infrastructure and Manpower:** Open dialysis units should be established by each block, nephrology training seats should be improved, and integral services for dialysis centers should be provided.
2. **Launch National CKD Screening Programmes:** Undertake community screening for early CKD, hypertension, and diabetes, and train primary health workers to refer and detect.
3. **Provide Affordable Access and Insurance Reforms:** Increase Ayushman Bharat reimbursement limits, institute timely claim settlements, and extend immunosuppressive therapy to transplant recipients.
4. **Integrate AYUSH with Contemporary Nephrology:** Conduct randomized controlled trials of Ayurvedic treatment, establish protocols for the use of traditional medicine, and regulate AYUSH practitioners.
5. **Launch Awareness Campaigns and School Education:** Establish media-based awareness and education for kidney health as part of school learning.
6. **Offer Mental Health and Nutrition Services:** Offer renal dietetic counseling and mental health interventions in nephrology units and coordinate patient and caregiver support groups in communities.

CONCLUSION

CKD is a new public health issue in India, and challenges in treatment arise due to a complex interplay of systemic, economic, and sociocultural obstacles. The years 2023-2025 have put into focus the inadequacy of India's nephrology infrastructure, post-COVID burden, and unorganized systems of care. Though several schemes have been launched by the government, their execution is uneven, urban-rural, and bureaucratically intricate.

Inadequate preventive nephrology services, limited access to low-cost dialysis and transplantation, and poor psychosocial and nutritional support persist in detracting from treatment outcomes. Low levels of awareness in the general community, stigmatisation, and under-supply within the labour market also perpetuate these issues, particularly for rural and marginalized groups.

India must adopt a multisectoral approach prevention, early detection, public funding, and patient-centered care simultaneously to make headway. Investment in CKD infrastructure, training of primary healthcare providers, re-engineering insurance schemes, and adoption of evidence-based traditional medicine can reduce the cost of treatment. India can overcome its current CKD treatment barrier only by taking action that integrates policy, community, and clinical innovation.

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