



UNIVERSITY OF GOTHENBURG



TECHNICAL REPORT

The Characteristics of Patients on Dialysis at the National Kidney Center, Kathmandu

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Introduction

Chronic kidney disease (CKD) is a global public health problem (Bello et al, 2023). The societal burden of kidney failure is significant due to high treatment costs and extensive impacts on the health and well-being of people living with kidney disease. By 2040, kidney disease is predicted to be the fifth most common non-communicable disease (NCD) driver of mortality, highlighting the growing burden of CKD on the global population (Francis et al. 2024). In Nepal, there is also a rising burden of CKD (Pandey et al 2023) and, as elsewhere, diabetes mellitus type 2 is the leading risk factor, followed by hypertension.

However, there is now also increasing recognition of a type of kidney disease that is not associated with diabetes, vascular disease, or glomerulonephritis and other specific etiologies, often denoted CKD of unknown etiology (CKDu) or CKD of non-traditional etiology (CKDnT). This form of kidney disease is increasingly recognized as disproportionately impacting working-age individuals in low- and middle-income countries (Rutter et al 2024). This has also been observed in Nepal, with a reported age-standardized prevalence of CKDnT (defined as eGFR <60 per 1.73m² by sex, without self-reported diabetes or hypertension and without high albuminuria) of 0.5% and 0.3% among a national sample of men aged 18-60 from rural and urban areas, in comparison to the prevalence of all cause CKD of 0.9% and 0.8 among men from rural and urban areas, respectively (data from Rutter et al 2024).

Many risk factors for CKDnT have been proposed, ranging from toxicants to genetic susceptibility. However, the hitherto most consistently demonstrated risk factor is exposure to occupational heat stress from a combination of heavy manual work creating high metabolic heat in addition to high environmental heat, i.e. a heat-induced kidney disease (Elinder 2025).

Notably, observations at dialysis centers in Kathmandu, Nepal have indicated an increase of young patients with a recent occupational history of migrant work in hot climates (Sharma et al 2023), suggesting but not proving a heat-stress related etiology.

The present study aimed to characterize the sociodemographic profile and risk factors for kidney diseases among all adult patients currently on regular hemodialysis at the National Kidney Center (NKC) in Kathmandu, Nepal, through a brief survey, simple enough for widespread use at other dialysis centers in the future. . The survey is the first step of a series of investigations among dialysis patients with a history of migration for work, aiming to explore work conditions including experiences of forced labour, encounters with the health system while falling ill abroad or after return, and the trajectory from being a healthy worker to a person with a life-threatening disease. This research program combines brief surveys,

in-depth patient interviews, and extended questionnaires to dialysis patients with and without a migration history. While the following presents findings from a brief survey aiming to give an overview of patient characteristics, later reports in this series will include findings related to migrant experiences with forced labour.

Method

The survey was conducted at the National Kidney Center (NKC) in Kathmandu, which provided a list of all patients currently on regular hemodialysis in October, 2024. NKC is a nonprofit non-government organization (NGO), having the largest haemodialysis treatment facility in Nepal, operated by Health Care Foundation-Nepal (<https://www.nkc.org.np/page/about-nkc>). The study was approved by the Ethical Review Board of the Nepal Health Research Council (Reg. No. 184_2023, Approved on 14 June 2023).

After obtaining informed consent, three trained data enumerators from the Nepal Development Society (NeDS) performed bedside data collection during ongoing dialysis sessions (Questionnaire in Appendix). Study data were collected and managed using REDCap electronic data capture tools hosted at NeDS. All data was self-reported; no comparisons were made to information from the patient's dialysis records, which only focused on clinical details and did not convey any desired information except for the exact date of the first dialysis at NKC. Since patients attend dialysis three days a week, it was possible to include all patients during a brief study period, 21 Oct to 25 Oct, 2024. No patient refrained from participation. All patients agreed to bedside interviews during their dialysis session, and the dialysis nurses did not report any disruptions of their work. In total, three enumerators working in shifts completed 404 interviews over 5 days.

Results

The patient characteristics

In total, 259 men (65%) and 145 women (35%) were on regular maintenance dialysis (Table 1). The duration of dialysis was similar between all categories, with a median of 3 years (75th percentile, 6 years). One out of three men had any migration experience, compared to one in every 12 women.

Table 1. Descriptive data for patients currently on dialysis at NKC, Kathmandu

	Men		Women	
	No migrant history (n= 174)	Migrant history (n=85)	No migrant history (n=133)	Migrant history (n=12)
Age when started dialysis*	54 (17, 84)	37 (19, 77)	44 (11, 84)	36 (21, 53)
Duration of dialysis (yrs)*	3 (0, 14)	3 (0, 13)	3 (0, 19)	4 (0, 12)
Present age*	56 (21, 87)	41 (19, 80)	48 (11,85)	37 (28,57)
Time since first diagnosed as kidney disease				
<1 yr	18 (10%)	15 (18%)	15 (11%)	3 (25%)
1-2 yr	25 (14%)	12 (14%)	23 (17%)	1 (8%)
2-5 yr	57 (33%)	19 (22%)	29 (22%)	1 (8%)
5-10 yr	44 (25%)	29 (34%)	54 (41%)	5 (42%)
<10 yr	30 (17%)	10 (12%)	12 (9%)	2 (17%)
Diabetes before diagnosis of kidney disease	58 (33%)	9 (11%)	28 (21%)	1 (8%)
Hypertension before diagnosis of kidney disease	139 (80%)	65 (77%)	98 (74%)	9 (75%)
Diagnosed with kidney disease while abroad	3 (2%)	38 (45%)	2 (2%)	7 (58%)

*Median (min, max)

Patients with any experience of migration for work were markedly younger at the start of dialysis, compared to those never working abroad, median of 37 (migration) versus 54 (no migration) years in men, and 36 (migration) versus 44 (no migration) years in women. The bimodal age distribution in migrant men should, however, be noted. Almost all dialysis patients with any migration experience had entered dialysis before age 60 (Figure 1).

Migrants on dialysis

Overall, one in four patients reported ever migration for work. The most visited destination countries (≥ 5 returnees per country) during the last work period are listed in Table 2. The full list of countries is found in Supplementary Table 1.

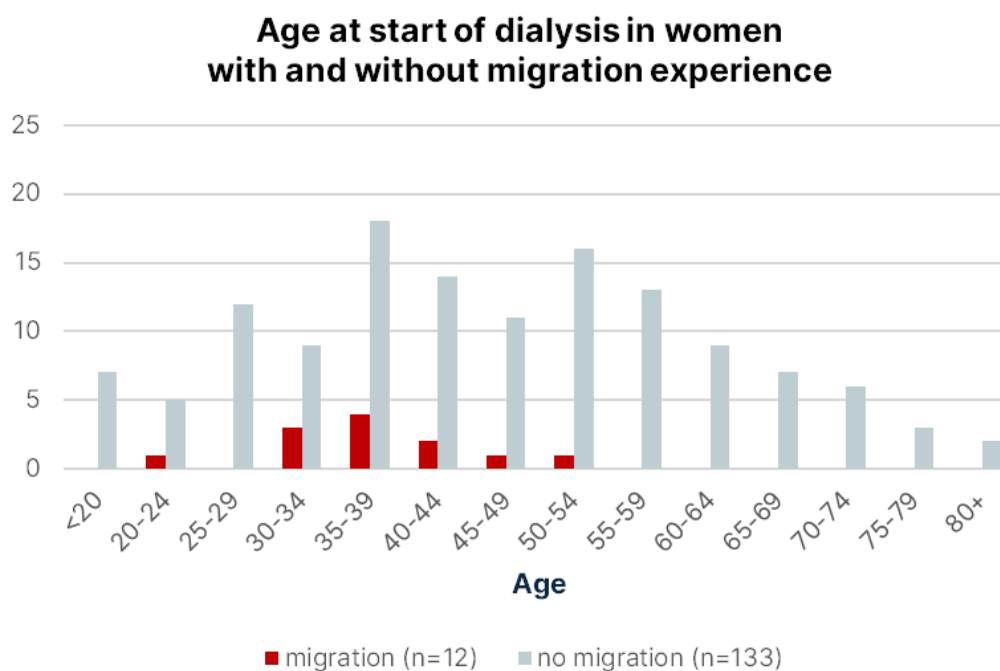
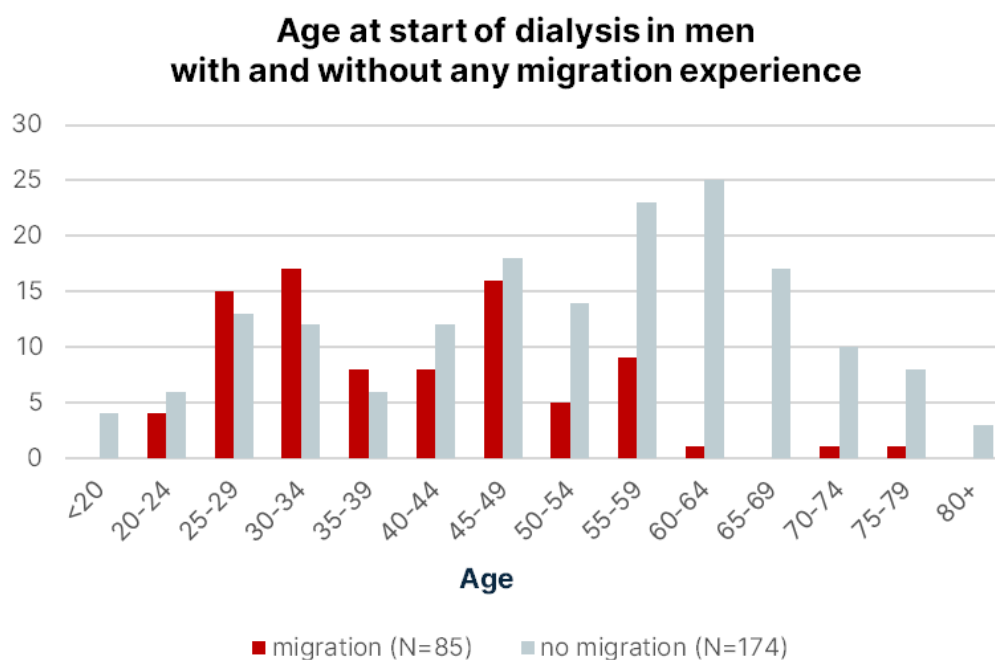


Figure 1. The distribution of age at start of dialysis in men and women with and without migration experience

Table 2. The most common destination countries (most recent destination) for dialysis patients with experience of migration for work

Destination Countries	Men	Women
Saudi Arabia	21	3
Dubai/UAE	14	3
Qatar	10	0
Kuwait	5	3
Malaysia	16	0
India	14	0

In half of the patients with migration experience, the diagnosis of kidney disease was established abroad (Table 1). Notably, about half of the migrants started dialysis within approximately a year after the last return (Table 3), with little variation between calendar years. There was also a small group, 15%, who started dialysis more than 10 years after their last return from migration.

Among migrants with a diagnosis abroad (men and women combined), the median age at start of dialysis was 33 years, and the median start of dialysis in Nepal was within a year after return. For former migrants with diagnosis in Nepal, the median age was considerably higher, 41 years, and the median duration between last return and start of dialysis was 3.5 years.

Table 3. The time gap between last return from migration and the start of dialysis during the period 2019-2024¹

Start of dialysis	Number of patients starting dialysis	Number of patients with migration experience	Return from migration same or previous calendar year	Return from migration $\geq$ 10 years earlier	Last return Median, 25, 75 percentiles
2024	74	21	8 (38%)	3 (14%)	2022 (2017,2024)
2023	69	13	7 (54%)	1 (7%)	2022 (2017,2023)
2022	38	10	5 (50%)	3 (30%)	2019 (2011, 2022)
2021	38	7	3 (43%)	3 (43%)	2013 (2001,2021)
2020	37	9	4 (44%)	0 (0%)	2018 (2014, 2020)
2019	28	9	4 (44%)	1(11%)	2017 (2016, 2018)

¹ The median duration of dialysis was 3 years; with 75 percentile 6 years. The observation period was restricted, thus avoiding inclusion of the most extreme survivors in dialysis. Still, a survivor effect is clearly seen.

Medical risk factors for kidney disease

In all groups, migrants and non-migrants alike, about eight out of ten patients reported that they had hypertension before their kidney disease (Table 1). Overall, diabetes was somewhat more common in men than in women.

While self-reported hypertension prior to diagnosis of kidney disease was stated by more than half of the patients, a marked difference was that those with migration experience more seldom reported diabetes, alone or in combination with hypertension compared to non-migrants (10% vs 34 % in men, 8% vs 22% in women; Figure 2). In migrant men and women starting dialysis within a year after the last return from migration, the proportion of diabetes with or without hypertension was even smaller, 4%.

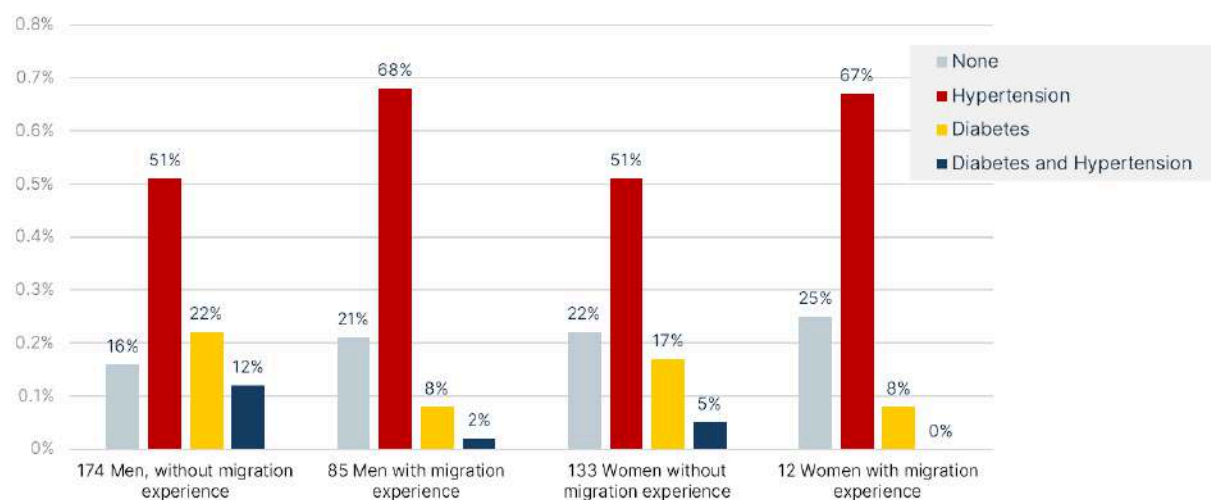


Figure 2. Self-reported diabetes and hypertension in male and female dialysis patients with and without migration experience

Residence before and after start of dialysis

Participants were asked about their current previous address during adulthood on district, municipality, ward, and tole level (Supplementary Table 2). Most patients were currently living in Kathmandu district (348 patients of which 302 had moved from other districts) and the adjacent districts Lalitpur (31 patients of which 20 had moved from other districts) and Bhaktapur (20 patients, of which 16 had moved from other districts).

By asking for previous addresses, we wanted to assess if the patients were forced to move because of dialysis needs. We also wanted to explore whether there were any municipalities with a high number of dialysis patients with migrant experience. Except for the municipalities Kathmandu (57 non-migrants), Tarkeshwor (11 non-migrants), Lalitpur (6 non-migrants), and Kakani (10 non-migrants), there were no municipalities reported with 5 or more patients. Thus, no “migration hotspot” municipalities could be identified.

Discussion and conclusions

In Nepal, four out of five migrants are male (Census data 2021), which is reflected in the low prevalence of female dialysis patients with migration experience. Overall, there were more men than women on hemodialysis, reflecting the well-known sex disparity in end-stage kidney disease morbidity and mortality.

There was a striking age difference between patients with and without migration experience. On average, men who had ever migrated for work started dialysis 17 years earlier than non-migrants, and for those with a diagnosis abroad, even as early as in their early thirties. These lost years have profound implications for individuals and families, beyond ill health and drastically shortened life expectancy. On a societal level, in addition to many productive years lost in these young patients, the direct costs of renal replacement therapy are immensely high.

Notably, half of the migrant patients reported that the diagnosis of kidney disease was established while they were abroad. Among the youngest migrants, a diagnosis abroad and dialysis within a year after return were common. Given that all migrants should undergo a health check before leaving, usually for 2-year contract periods, which is repeated at arrival in several destination countries, it is not likely that they left Nepal with an established CKD. Rather, this suggests a rapid progressive kidney function decline, perhaps triggered by an AKI event, or that a previously non-detected mild kidney dysfunction was aggravated while working abroad.

The survey included questions on diabetes and hypertension “before being diagnosed with your kidney disease” but, unfortunately, there was no follow-up question on the duration of these diseases. Moreover, it is not clear if the patient referred to a diagnosis of end-stage kidney disease and the need for renal replacement therapy or if they refer to a previous diagnosis of kidney disease at earlier stages. This is a limitation which precludes the understanding of potential causality.

Diabetes can lead to diabetic nephropathy but not the opposite way around. Thus, observations on diabetes as a risk factor for CKD are not obscured by reverse causation. Clearly, there was less suspected diabetes nephropathy in migrants than in non-migrants, especially in those starting dialysis within the same or previous year as return from the last migration. Thus, it is unlikely that end-stage renal disease (ESRD) in migrants was explained by undiagnosed diabetics with kidney disease not detected at insufficient health screenings pre-departure or upon arrival in destination countries.

In contrast, while uncontrolled hypertension can lead to kidney injury, hypertension is also a consequence of kidney disease. The lack of reliable information on the duration of hypertension in our study is thus a limitation as to the understanding of high blood pressure as a risk factor for kidney disease in this population. While hypertension is common in the Nepalese population, there is still little knowledge on the relationship between hypertension and kidney function in the general Nepalese population. Own unpublished data from a community-based investigation in men aged 35-74 indicated a prevalence of hypertension (defined as a self-reported medical diagnosis or SBP >140 mm Hg or DBT > 90 mm Hg) of 38% in men with eGFR > 60 ml/min/1.73m², and 40% in those with eGFR <60.

The findings in this scoping study are similar to a previous study among the dialysis patients at NKC in Kathmandu in April-May 2023 (Sharma et al, 2023). Taken together, these investigations have shown that one out of three men on dialysis were former migrants working abroad in countries with a hot climate. Often, kidney disease was detected abroad and progressed rapidly, leading to the need for dialysis at a young age. In the present study, a possible diabetes nephropathy was observed in 10% of the male migrants, while 21% reported neither diabetes nor hypertension. The latter category would formally indicate a possible CKDnT, following the operational definition often used in epidemiological studies (no diabetes, no hypertension).

There is ample evidence from epidemiological and intervention studies among manual workers in hot climates, sports physiology, and experimental research that occupational heat stress is a risk factor for decreased kidney function, AKI, and CKD (Elinder 2025). This scoping study did not aim to elucidate working conditions among dialysis patients - this will follow in extended in-depth studies using qualitative and quantitative methodologies - but it seems likely that occupational heat stress is an important risk factor for kidney disease in Nepalese migrant workers. Moreover, persons with preexisting diabetes, and hypertension would be at an even higher risk for heat-related kidney disease. Hence, in populations with a high prevalence of hypertension, the use of an exclusive CKDnT definition for a work-related CKD would lead to substantial underestimation.

In this survey, we observed seemingly similar survival in dialysis among migrants and non-migrants, but the retrospective observation time is too short for any firm conclusions on progression and survival in dialysis. There is a need for longitudinal follow-up and information on reasons for the end of dialysis for any conclusions on progression. There is no renal registry in Nepal, but recent data from the US reported 9.7 expected remaining years of life in prevalent male dialysis patients aged 40-44, compared to 22 years in transplanted patients (USRDS 2024). However, the transplant program in Nepal is still limited.

This brief survey proved to be a feasible and cost-effective way to gain information on the total spectrum of patients currently on dialysis at NKC. A scoping study questionnaire can easily be administered and analyzed in other dialysis clinics for continuous monitoring of the composition of patients. If every new patient entering dialysis were to be included, and if the reason and time for end of dialysis also was registered, the dialysis clinic would have useful data on its operations and its changes over time. There is not yet an ESRD registry in Nepal, but such local initiatives might function as seeds for a national registry. As scoping study data describe the general spectrum of patients they can also form the basis for in-depth clinical studies. Moreover, they are needed for health economical assessments for different CKD entities. Especially, the ESRD- related costs of migration in Nepal can be calculated, and followed over time.

The findings in the 2024 scoping study at NKC (this report) and the following in-depth interviews with participants with and without migration experience (January 2025; to be separately reported) have informed a revised scoping survey and an extensive questionnaire with focus on work conditions, including forced labour, and healthcare experiences during migration and after return, already used in investigations in other dialysis clinics in Nepal (data collection March 2025).

Findings from this series of investigations will inform the planning of interventions in the program Enhanced Network for Safety and Occupational Health Utilisation and Risk Evaluation (ENSURE). Still, even this first scoping study is informative enough: The observation of such a large proportion of migration-associated life-threatening kidney disease calls for good pre-migration health examinations and health advice as well as access to the health care system in the destination country. Also, a health examination after the end of a contract period is warranted for the detection of kidney disease at earlier stages, thus enabling a possibility to reduce the risk for progression into late-stage CKD by proper medical advice and treatment. Most importantly, the findings highlight the immediate need for primary prevention of workplace heat stress in destination countries.

Acknowledgements

We thank all patients participating in the study and the data enumerators.

We also acknowledge the support from the National Kidney Center, Banasthali, Kathmandu:

Dr. Rishi Kumar Kafle, MBBS, MD,
Subhadra Upadhyay Regmi, Nursing In-charge
Suraksha Subedi, MSc, PhD, Head of Research

Funding

Conceptualization, data analysis, and report writing were funded through a grant from the Swedish Research Council, grant-2022-03318: *Migrant work in heat and health - a study in Nepal with focus on kidney disease*.

The field survey and data management were funded within a grant from the US Department of State; grant-SSJTIPS23CA0022: *Enhanced network for Safety and Occupational Health Utilization and Risk Evaluation (ENSURE)*

The opinions, findings, and conclusions-stated herein are those of the author[s] and do not necessarily reflect those of the United States Department of State

References

- Bello AK, Okpechi IG, Levin A, and Ye F. “ISN–Global Kidney Health Atlas: A Report by the International Society of Nephrology: An Assessment of Global Kidney Health Care Status Focussing on Capacity, Availability, Accessibility, Affordability and Outcomes of Kidney Disease.” International Society of Nephrology, 2023.
https://www.theisn.org/wp-content/uploads/media/ISN%20Atlas_2023%20Digital_REV_2023_10_03.pdf.
- Elinder CG. Heat-induced kidney disease: Understanding the impact. *J Intern Med*. 2025 Jan;297(1):101-112. doi: 10.1111/joim.20037. Epub 2024 Nov 28. PMID: 39607397; PMCID: PMC11636433. <https://doi.org/10.1111/joim.20037>
- Francis A, Harhay MN, Ong ACM, Tummalapalli SL, Ortiz A, Fogo AB, Fliser D, et al. “Chronic Kidney Disease and the Global Public Health Agenda: An International

Consensus.” *Nature Reviews Nephrology* 20, no. 7 (July 2024): 473–85.
<https://doi.org/10.1038/s41581-024-00820-6>.

Pandey AR, Poudyal A, Adhikari B, Shrestha N. Burden of chronic kidney disease in Nepal: An analysis of the burden of disease from 1990 to 2019. *PLOS Glob Public Health*. 2023 Jul 19;3(7):e0001727. doi: 10.1371/journal.pgph.0001727. PMID: 37467235; PMCID: PMC10355414.

Poudyal A, Karki KB, Shrestha N, Aryal KK, Mahato NK, Bista B, Ghimire L, Kc D, Gyanwali P, Jha AK, Garcia-Larsen V, Kuch U, Groneberg DA, Sharma SK, Dhimal M. Prevalence and risk factors associated with chronic kidney disease in Nepal: evidence from a nationally representative population-based cross-sectional study. *BMJ Open*. 2022 Mar 21;12(3):e057509. doi: 10.1136/bmjopen-2021-057509. PMID: 35314475; PMCID: PMC8938697.

Rutter CE, Njoroge M, Cooper P, Dorairaj P, Jha V, Kaur P, Mohan S, Tatapudi RR, Biggeri A, Rohloff P, Hathaway MH, Crampin A, Dhimal M, Poudyal A, Bernabe- Ortiz A, O'Callaghan-Gordo C, Chulasiri P, Gunawardena N, Ruwanpathirana T, Wickramasinghe SC, Senanayake S, Kitiyakara C, Gonzalez-Quiroz M, Cortés S, Jakobsson K, Correa-Rotter R, Glaser J, Singh A, Hamilton S, Nair D, Aragón A, Nitsch D, Robertson S, Caplin B, Pearce N; DEGREE Study Group. International prevalence patterns of low eGFR in adults aged 18-60 without traditional risk factors from a population-based cross-sectional disadvantaged populations eGFR epidemiology (DEGREE) study. *Kidney Int*. 2024 Dec 19:S0085-2538(24)00910-4. doi: 10.1016/j.kint.2024.11.028. Epub ahead of print. PMID: 39708999.

Sharma S, Inagaki Y, Kafle RK, Koirala S, Khadka N, Pooja KC, Jakobsson K, Wesseling I, Glaser J, Neupane D. Characteristics of migrant and non-migrant end-stage renal disease patients in Nepal (abstract). [American Society of Nephrology | Kidney Week - Search Abstracts \(2023\)](#)

USRDS Annual Data Report 2024.
<https://ussrdr-adr.niddk.nih.gov/2024/end-stage-renal-disease/6-mortality>Supplementary material

Supplementary material

Questionnaire (English translation)

Enumerator ID			
Patient initials			
Unique study ID			
Date of birth	YY/MM/DD		
Sex	Male, Female		
When were you first informed that your kidneys did not function well?	<10 yrs ago; 5-10 yrs ago; 2-5 yrs ago; 1-2 yrs ago, <1 yr ago		
Where were you diagnosed?	Nepal Abroad		
Start of dialysis	YYYY		
Did you have diabetes before being diagnosed with your kidney disease?	Yes, No		
Did you have hypertension before being diagnosed with your kidney disease?	Yes, No		
Have you ever migrated abroad for work?	Yes, No		
	If yes.....	When did you return from abroad last time	YYYY
		In which country did you work the last time (most recently)	
Current address	District, municipality		
	Municipality		
	Ward		
	Tole		
Previous address	District, municipality		
	Municipality		
	Ward		
	Tole		

Supplementary Table 1. All reported countries (most recent destination) in dialysis patients with experience of migration for work

Destination Country	Men	Women
Saudi Arabia	21 (25%)	3 (25%)
Malaysia	16 (19%)	
UAE (Dubai)	14 (16%)	3 (25%)
India	14 (16%)	
Qatar	10 (12%)	
Kuwait	5 (6%)	3 (25%)
Israel		2 (17%)
Bahrain	1 (1%)	
Iraq		1 (8%)
Cambodia	1 (1%)	
USA	1 (1%)	
UK	1 (1%)	
Iceland	1 (1%)	

Supplementary Table 2. Present and previous addresses among men and women on dialysis at NKC, Kathmandu



	Previous address		Present address	
	No migration for work	Ever migration for work	No migration for work	Ever migration for work
PROVINCE 1 Koshi				
Bhojpur District	1 (0.3%)			
Dhankuta District	1 (0.3%)			
Ilam District	1 (0.3%)	2 (2.1%)		
Jhapa District	1 (0.3%)	1 (1.0%)		
Khotang District	2 (0.7%)	1 (1.0%)		
Morang District	4 (1.3%)			
Okhaldhunga District				
Panchthar District	1 (0.3%)	2 (2.1%)		
Sankhuwasabha District	3 (1.0%)	6 (6.2%)		
Solukhumbu District				
Sunsari District	4 (1.3%)	1 (1.0%)		
Taplejung District				
Terhathum District		1 (1.0%)		
Udayapur District	8 (2.6%)	1 (1.0%)		
PROVINCE 2 Madhesh				
Saptari District	1 (0.3%)	2 (2.1%)		
Siraha District	2 (0.7%)	2 (2.1%)		
Dhanusa District	2 (0.7%)	1 (1.0%)		

	Previous address		Present address	
	No migration for work	Ever migration for work	No migration for work	Ever migration for work
Mahottari District	4 (1.3%)	1 (1.0%)		
Sarlahi District	8 (2.6%)			
Bara District	4 (1.3%)	2 (2.1%)		
Parsa District	2 (0.7%)			
Rautahat District	2 (0.7%)			
PROVINCE 3 Bagmati				
Sindhuli District	3 (1.0%)	3 (3.1%)		
Ramechhap District	10 (3.3%)	3 (3.1%)		
Dolakha District	6 (2.2%)	6 (6.2%)		
Bhaktapur District	5 (1.6%)		16 (5.4%)	4 (4.1%)
Dhading District	16 (5.2%)	6 (6.2%)		
Kathmandu District	88 (28.7%)	9 (9.3%)	270 (87.9%)	78 (80.4%)
Kavrepalanchok District	10 (3.3%)	2 (2.1%)	2 (0.7%)	1 (1.0%)
Lalitpur District	8 (2.6%)	3 (3.1%)	17 (5.5%)	14 (14.4%)
Nuwakot District	22 (7.2%)	6 (6.2%)	2 (0.7%)	
Rasuwa District	2 (0.7%)			
Sindhupalchok District	13 (4.2%)	4 (4.1%)		
Chitwan District	2 (0.7%)			
Makwanpur District	7 (2.3%)	1 (1.0%)		
PROVINCE 4 Gandaki				
Baglung District	2 (0.7%)	5 (5.2%)		
Gorkha District	10 (3.3%)	4 (4.1%)		
Kaski District	3 (1.0%)			
Lamjung District	1 (0.3%)	2 (2.1%)		
Manang District	1 (0.3%)			
Mustang District				
Myagdi District	1 (0.3%)	2 (2.1%)		
Nawalpur District	1 (0.3%)			
Parbat District	1 (0.3%)	1 (1.0%)		
Syangja District	4 (1.3%)	1 (1.0%)		
Tanahun District	6 (2.2%)	2 (2.1%)		
PROVINCE 5 Lumbini				
Kapilvastu District				
Parasi District				
Nawalparasi District	3 (1.0%)			
Rupandehi District	3 (1.0%)	3 (3.1%)		
Arghakhanchi District	2 (0.7%)			

	Previous address		Present address	
	No migration for work	Ever migration for work	No migration for work	Ever migration for work
Gulmi District	2 (0.7%)	2 (2.1%)		
Palpa District	1 (0.3%)			
Dang District	1 (0.3%)			
Pyuthan District	2 (0.7%)			
Rolpa District		1 (1.0%)		
Eastern Rukum District	1 (0.3%)	2 (2.1%)		
Banke District	4 (1.3%)			
Bardiya District	1 (0.3%)			
PROVINCE 6 Karnali				
Western Rukum District				
Salyan District	3 (1.0%)	2 (2.1%)		
Dolpa District				
Humla District				
Jumla District				
Kalikot District	1 (0.3%)			
Mugu District				
Surkhet District				
Dailekh District				
Jajarkot District	1 (0.3%)			
PROVINCE 7 Sudurpashchim				
Kailali District	2 (0.7%)			
Achham District				
Doti District				
Bajhang District	1 (0.3%)			
Bajura District	1 (0.3%)			
Kanchanpur District				
Dadeldhura District	1 (0.3%)			
Baitadi District				
Darchula District	3 (1.0%)			