

Perception of Nephrology among Medical Doctoral Students at Lome in 2024

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Abstract

Introduction: Despite its pivotal function in the management of renal diseases, nephrology is an area that attracts few medical students. The objective of this study was to assess their perception of this specialty and to identify the factors influencing their career choices. **Methodology:** A cross-sectional study was conducted over a period of five months at the University of Lome. A self-administered questionnaire was used to collect data on subjects' demographics, academic background and perception of the field of nephrology. This data was analysed using univariate and multivariate statistical methods to identify the factors influencing the choice of nephrology. **Results:** 174 medical doctoral students were included, predominantly male with a sex ratio of 2.35. Among the participants, 37 (21.3%) were considering a career in nephrology. Multivariate analysis confirmed that clinical exposure (OR = 58.6 for one internship, OR = 119 for multiple internships) was the main determinant of interest in nephrology. Conversely, negative perceptions of the discipline and the pedagogical characteristics of the courses were not significantly associated with career choice. **Conclusion:** It is evident that interest in nephrology is predominantly driven by clinical experience and mentorship from educators. To enhance its appeal, it is essential to expand access to internships to foster student engagement.

Keywords

Nephrology, Perception, Medical Students, Lomé

1. Background

Chronic kidney disease (CKD) is now widely regarded as a major public health

challenge, yet the true prevalence of the condition in Africa remains unknown [1] [2]. However, it should be noted that the serious complications of kidney failure can be significantly reduced through early detection and appropriate management [3]. The role of the nephrologist is therefore pivotal, not only in the treatment of patients with kidney disease, but also in its prevention. The perceptions of medical students regarding nephrology have been shown to have a significant influence on career choices and, by extension, the future availability of nephrology care [4] [5].

At the Faculty of Health Sciences of the University of Lome, medical students receive fundamental training in a range of specialties, including nephrology [6] [7]. Nevertheless, there is a possibility that educational resources and training opportunities in this field may be restricted, which could have an impact on students' perceptions of nephrology and their inclination to pursue a specialisation in this area.

A comprehensive understanding of medical students' perceptions of nephrology is instrumental in the refinement of their educational curriculum, a process which will serve to enhance the appeal of the specialty. The paucity of nephrologists in Togo underscores the imperative for heightened awareness of this specialty among the medical fraternity.

The primary objective of this study is to describe the perception of nephrology and the factor of desire for a career as a nephrologist among medical students at the Faculty of Health Sciences, University of Lomé, during the academic year 2023-2024.

2. Methods

2.1. Study Type, Setting and Period

This was a cross-sectional study conducted over a period of five (05) months, from May to October 2024. The study took place at the Faculty of Health Sciences, University of Lomé (FSS-UL), Togo.

2.2. Study Population

The study population consisted of medical students enrolled in the doctoral years (6th, 7th and 8th years) at the FSS-UL for the academic year 2023-2024. All were invited to participate.

2.3. Inclusion and Exclusion Criteria

The study population comprised all students officially enrolled in the doctoral years of medical studies at FSS-UL who had consented to participate. It was determined that students who had already defended their thesis and hospital residents would not be included.

2.4. Data Collection and Analysis

The data was collected using a pre-designed questionnaire, which was developed and administered to students during their class. Following the conduction of univariate and multivariate analyses, the influence of different factors on future spe-

cialty choice was assessed using the chi-square independence test and Fisher's exact test. A significance threshold of p set at 0.05 was used.

2.5. Variables Studied

The different variables studied included:

- Socio-demographic and general data.
- Evaluation of the nephrology course (understanding of the course, objectives, and importance, degree of adaptation to prior knowledge, dynamic presentation, satisfaction with course content in relation to professional and educational orientation, availability and accessibility of instructors).
- Perception of nephrology as a specialty (mandatory nephrology internship, nephrology as an interesting, depressing, difficult, or male-dominated specialty, difficulties in referring patients requiring nephrological care, prognosis of nephrological conditions, remuneration of nephrologists, their intelligence, impact on family life, influence of professors on specialty choice, career plans in nephrology).

2.6. Definitions

Internship: mandatory rotation during medical school which duration varies according to the year of study and the division of the academic year.

Dynamic course of presentation is defined as an interactive course from mechanism to bedside.

2.7. Ethical and Regulatory Considerations

Ethical approval was obtained from the Ethics Committee of the Faculty of Health Sciences of the University of Lomé. Participation in the survey was voluntary. Implicit consent was obtained through a message accompanying the survey link. Anonymity and confidentiality were ensured for all participants.

3. Results

A total of 178 students participated in the survey and 174 records were usable. The highest participation rate was recorded among 6th-year students. The sample comprised 99 doctoral students in the 6th year (57% of the total), 36 trainee interns (21%), and 39 former interns or 8th-year doctoral students (22%). Males predominated, representing 70.1% of participants compared to 29.9% females, with a sex ratio of 2.35.

The mean age was 25 years, ranging from 21 to 38 years. Most students (93.1%) were between 20 and 30 years old.

The completion of an internship in a nephrology department ($p < 0.001$), good comprehension of the nephrology course ($p = 0.007$), and dynamic course presentation ($p = 0.010$) were associated with a desire to specialize in nephrology. Sixty percent of respondents considered nephrology not to be a depressing specialty; 46% did not find it difficult, and 44% stated they clearly understood the course objectives (**Table 1** and **Table 2**).

Table 1. Sociodemographic and evaluation of nephrology course characteristics according to the desire to pursue a career in nephrology.

Characteristic	Career in Nephrology			p-value
	No, N = 137	Yes, N = 37	Total, N = 174	
Year of Study				0.3
6th Year	75 (55%)	24 (65%)	99 (57%)	
7th Year	28 (20%)	8 (22%)	36 (21%)	
8th Year	34 (25%)	5 (14%)	39 (22%)	
Age (years)				0.5
]20, 30]	126 (93%)	36 (97%)	162 (94%)	
]30, 40]	10 (7.4%)	1 (2.7%)	11 (6.4%)	
Gender				0.7
Female	42(31%)	10 (27%)	52 (30%)	
Male	95 (69%)	27 (73%)	122 (70%)	
Marital Status				0.3
Single	122 (89%)	36 (97%)	158 (1%)	
Engaged	3 (2.2%)	1 (2.7%)	4 (2.3%)	
Married	11 (8.0%)	0 (0%)	11 (6.3%)	
Widowed	1 (0.7%)	0 (0%)	1 (0.6%)	
History of Nephrological Disease				0.060
None	129 (94%)	33 (89%)	162 (3%)	
Family History	8 (5.8%)	2 (5.4%)	10 (5.7%)	
Personal History	0 (0%)	2 (5.4%)	2 (1.1%)	
Internship in a Nephrology Department				<0.001
No	120 (88%)	19 (51%)	139 (0%)	
More than once	2 (1.5%)	5 (14%)	7 (4.0%)	
Once	15 (11%)	13 (35%)	28 (16%)	
Understanding of Course Objectives and Importance				0.15
Not at all	4 (2.9%)	0 (0%)	4 (2.3%)	
A little	18 (13%)	3 (8.1%)	21 (12%)	
Moderate	49 (36%)	8 (22%)	57 (33%)	
Good	60 (44%)	22 (59%)	82 (47%)	
Very good	6 (4.4%)	4 (11%)	10 (5.7%)	
Availability of Professors				0.11
Strongly disagree	9 (6.6%)	1 (2.7%)	10 (5.7%)	
Somewhat agree	50 (36%)	7 (19%)	57 (33%)	
Agree	64 (47%)	24 (65%)	88 (51%)	
Strongly agree	14 (10%)	5 (14%)	19 (11%)	

Table 2. Perception of nephrology courses characteristics according to the desire to pursue a career in nephrology.

Characteristic	Career in Nephrology			p-value
	No, N = 137	Yes, N = 37	Total, N = 174	
Dynamic Presentation of Courses				0.010
Not at all	8 (5.8%)	0 (0%)	8 (4.6%)	
A little	22 (16%)	2 (5.4%)	24 (14%)	
Moderate	39 (28%)	13 (35%)	52 (30%)	
Good	61 (45%)	14 (38%)	75 (43%)	
Very good	7 (5.1%)	8 (22%)	15 (8.6%)	
Depressing Specialty				0.13
Strongly disagree	82 (60%)	26 (70%)	108 (2%)	
Somewhat agree	40 (29%)	9 (24%)	49 (28%)	
Agree	12 (8.8%)	0 (0%)	12 (6.9%)	
Strongly agree	3 (2.2%)	2 (5.4%)	5 (2.9%)	
Difficult Specialty				0.5
Strongly disagree	38 (28%)	15 (41%)	53 (30%)	
Somewhat agree	63 (46%)	15 (41%)	78 (45%)	
Agree	28 (20%)	6 (16%)	34 (20%)	
Strongly agree	8 (5.8%)	1 (2.7%)	9 (5.2%)	
Reserved Prognosis in Nephrology Diseases				0.2
Strongly disagree	22 (16%)	7 (19%)	29 (17%)	
Somewhat agree	79 (59%)	24 (65%)	103 (60%)	
Agree	29 (21%)	3 (8.1%)	32 (19%)	
Strongly agree	5 (3.7%)	3 (8.1%)	8 (4.7%)	
Missing	2	0	2	
Well-Paid Nephrologists				0.7
Strongly disagree	37 (29%)	12 (34%)	49 (30%)	
Somewhat agree	47 (37%)	10 (29%)	57 (35%)	
Agree	38 (30%)	11 (31%)	49 (30%)	
Strongly agree	4 (3.2%)	2 (5.7%)	6 (3.7%)	
Missing	11	2	13	
Strong Influence of Professors on Choosing Nephrology as a Specialty				0.2
Strongly disagree	31 (23%)	4 (11%)	35 (21%)	
Somewhat agree	44 (33%)	11 (31%)	55 (32%)	
Agree	40 (30%)	11 (31%)	51 (30%)	
Strongly agree	19 (14%)	10 (28%)	29 (17%)	
Missing	3	1	4	

Multivariate analysis, as shown in **Table 3**, reveals that nephrology rotations are the most influential factor in the choice of this specialty. Students who completed more than one rotation were more likely to choose nephrology (aOR = 119; $p = 0.013$), while those who completed only one rotation were 58.6 times more likely (aOR = 58.6; 95% CI: 6.31 - 1020) (**Table 3**).

Table 3. Multivariate analysis according to desire of career in nephrology.

Features	Nephrology career	Univariate analysis			Multivariate analysis		
		OR	95% CI	p-value	OR	95% CI	p-value
Do you have a history of nephrological pathology?							
None	20.4% (33/162)	—	—	—	—	—	—
Family	20.0% (2/10)	—	—	—	20.4	0.26 - 732	0.10
Personal	100.0% (2/2)	—	—	—	402	0.00 - NA	>0.9
Internship in a nephrology department							
No	13.7% (19/139)	—	—	—	—	—	—
Yes more than once	71.4% (5/7)	15.8	3.16 - 116	0.002	119	3.37 - 7732	0.013
Yes, once	46.4% (13/28)	5.47	2.25 - 13.4	<0.001	58.6	6.31 - 1020	0.001
Teachers availability to answer questions							
Strongly disagree	10.0% (1/10)	—	—	—	—	—	—
Somewhat in agreement	12.3% (7/57)	1.26	0.19 - 25.0	0.8	0.08	0.00 - 16.7	0.3
Agree	27.3% (24/88)	3.37	0.59 - 63.9	0.3	2.23	0.03 - 662	0.7
Strongly agree	26.3% (5/19)	3.21	0.42 - 67.0	0.3	1.54	0.01 - 385	0.9
Lecturers' influence on choice of nephrology specialty							
Strongly disagree	11.4% (4/35)	—	—	—	—	—	—
Somewhat in agreement	20.0% (11/55)	1.94	0.60 - 7.50	0.3	3.65	0.24 - 98.1	0.4
Agree	21.6% (11/51)	2.13	0.66 - 8.28	0.2	0.58	0.03 - 11.0	0.7
Strongly agree	34.5% (10/29)	4.08	1.18 - 16.6	0.033	6.09	0.27 - 191	0.3

4. Discussion

4.1. Strengths and Originality of the Study

In the face of a rapid rise in kidney disease cases, nephrology is proving to be a specialism of increasing importance in Togo, where there are only 5 nephrologists for a population of 8 million. This study underscores a perceived lack of appeal for this specialty among prospective doctors, highlighting potential avenues for tailored interventions. Medical doctoral students represent the pool of future specialists. This study identifies the key barriers to interest in nephrology and poten-

tial strategies to reverse this trend. It is one of the few studies exploring perceptions of nephrology in West Africa, shedding light on local realities that are often overlooked. It establishes the foundation for future research and targeted strategies to enhance medical training.

4.2. Reported Training and Future Perspectives

Students recognise the importance of nephrology, as highlighted by Sabi *et al.* [8] and Tsevi *et al.* [9], who emphasised the central role of general practitioners in managing kidney diseases [8] [9]. However, there are several challenges that need to be addressed. In contrast to the findings of international studies, Togolese students do not perceive nephrology as intellectually inaccessible. Instead, they regard it as a discipline that poses practical and logistical challenges. This specificity may reflect Togo's healthcare infrastructure, where limited resources constitute a major barrier. Unfamiliar clinical situations may stem from limited exposure in training settings, explaining the perceived gaps in acquired skills. These findings emphasise the need for refinement in training, with a focus on integrating theoretical and practical elements to enhance the educational experience. Theoretical training should be provided throughout the internship, with a strong emphasis on skill acquisition through dedicated internships and simulation workshops. In addition, the introduction of a continuous competency assessment logbook could offer a workable solution.

It is generally accepted that faculty members act as mentors, influencing specialty choices. However, the study found that their role is considered limited, with only 46% of students acknowledging their influence. The lack of state scholarships or financial support for specialisation, when viewed in conjunction with access to internships and quality teaching, has a significant impact on students' career choices, constituting a barrier to interest in nephrology.

Considering the escalating prevalence of chronic kidney diseases and the paucity of nephrologists in Togo (with only five nephrologists catering to eight million inhabitants), there is an urgent need to augment academic opportunities, infrastructure, and student awareness. These measures will help address the current shortage of nephrologists and improve patient care in Togo. Finally, this study calls for continued research on medical education and specialisation strategies to better respond to public health needs in the Togolese context.

Multivariate analysis demonstrated that clinical rotations in nephrology are the most decisive factor. As demonstrated in **Table 3**, students who had completed more than one nephrology rotation were 119 times more likely to choose the specialty. Those with only one rotation had a 58.6-fold increased likelihood ($p < 0.05$). The elevated odds ratios indicate that practical clinical experience is a crucial factor in students' career choices. This finding lends further credence to the notion that pedagogical interactions play a direct role in fostering interest in nephrology. The present findings are consistent with the conclusions of Gaucher *et al.* [10] and Mbou Essie *et al.* [11], both of whom emphasised the motivating impact of faculty

involvement in students' specialty choice.

4.3. Study Limitations and Biases

The limitations of the study, which was confined to FSS-Lomé, preclude the generalisation of its findings to other faculties or countries. To confirm these conclusions and assess the existence of similar perceptions in other locations, a multi-center study would be necessary.

The preponderance of 6th-year students (57%) may introduce a bias in the results, favoring the perspectives of this group, potentially to the exclusion of the views of interns and former interns with more clinical experience.

It is important to note that student responses may be indicative of what they believe to be the expectations of the faculty, as opposed to their genuine opinions. This phenomenon is prevalent in self-administered academic surveys.

A cross-sectional approach does not facilitate the assessment of alterations in perception over time. A longitudinal study could provide a more dynamic and comprehensive view, showing how perceptions evolve with clinical exposure and professional experience.

5. Conclusion

This study, conducted among medical doctoral students at the Faculty of Health Sciences of the University of Lomé, explored their perceptions of nephrology as a specialty. The findings emphasise a general awareness of nephrology's significance in the management of chronic kidney diseases and its critical role in the healthcare system. Nevertheless, interest in a career in nephrology remains limited, influenced by a number of academic, personal and structural factors.

What Is Already Known on This Topic

- Internships during medical training influence future specialty choice.

What This Study Adds

- Faculty members significantly impact career choices in nephrology.
- The way the course is taught does not influence nephrology specialization decisions.

Authors' Contributions

- Yawovi Mawufemo Tsevi: Drafted the introduction, discussion, and literature review.
- Badomta Dolaama: Collected data, performed statistical analysis, and wrote the results.
- Agbéko Kodjo Djagadou: Reviewed and corrected the article.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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