

Factors associated with choosing Nephrology as a subspecialty by Internal Medicine Residents in Nigeria

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Abstract

Background: There is a projected shortage of kidney specialists in Nigeria and there is need to train more residents in nephrology to meet the need of the teeming population of patients with chronic kidney Disease. The study identify factors affecting the choice of Nephrology among resident doctors in selected training institutions in Nigeria.

Methods: This cross-sectional study was conducted among the resident doctors in Internal Medicine in four randomly selected training institutions across the northern and southern parts of Nigeria. We developed a self-administered questionnaire in the English language after a thorough review of relevant literature. Data were gathered through the two-part questionnaire. In the first part, demography, gender, age, marital status, and level of training were documented and the second section included 24 questions about factors that influence the residents' choice of subspecialty.

Results: A total of 78 respondents were interviewed. The mean age of the respondent was 33.52 ± 3.52 . A higher proportion of the respondents were males (70.5%), 56.4% were senior registrars with the mean residency year of 3.46 ± 2.00 . A total of 52.6% never had interested in nephrology as a career choice while 47.4% that showed interest in nephrology, only 11.5% are currently in Nephrology. Most of those who had interest in Nephrology changed their mind along the line and are now registrars or senior registrars in other subspecialty. The most common factors identified were advice from other mentors or senior consultants (80.8%), outcome of most patients with renal condition (79.5%) and positive role model in nephrology medicine (76.9%). The least identified factors were prestige and respect accorded a nephrologist (35.9%) and societal expectation, peer encouragement and family's expectations (42.3%).

Conclusion: There is an urgent need to address factors that affects the choice of Nephrology. Effective steps towards addressing these factors may go a long way in improving the internal medicine residents' choice of Nephrology as a career in the near future.

Key words: career decisions, education, nephrology, training, Nigeria

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Received: April 3, 2019

Accepted: October 19, 2019

Published: December 30, 2019

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<http://dx.doi.org/10.4314/rejhs.v7i4.1>

Facteurs associés au Choix de la Néphrologie comme une sur Spécialité par les Résidents en Médecine Interne au Nigéria

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Résumé

Contexte général de l'étude: On prévoit un manque de spécialistes de la fonction rénale au Nigéria et il est nécessaire de former davantage de résidents en néphrologie pour répondre aux besoins de la population de patients atteints d'une maladie rénale chronique qui fait équipe. L'étude identifie les facteurs qui influent sur le choix de la néphrologie parmi les médecins résidents dans certains établissements de formation au Nigéria.

Méthodes de l'étude: Cette étude transversale a été menée parmi les médecins résidents en médecine interne de quatre établissements de formation choisis au hasard dans le nord et le sud du Nigéria. Nous avons développé un questionnaire auto-administré en anglais après un examen approfondi de la littérature pertinente et valable. Les données ont été recueillies au moyen du questionnaire en deux parties. Dans la première partie, la démographie, le sexe, l'âge, l'état matrimonial et le niveau de formation ont été documentés et la deuxième section comprenait 24 questions sur les facteurs qui influencent sur le choix de la sur spécialité par les résidents.

Résultats: Au total, 78 répondants ont été interviewés. L'âge moyen du répondant était de 33.52 ± 3.52 . Une proportion plus élevée de répondants étaient des hommes (70.5%), 56.4% étaient des officiers d'un grade supérieur avec une année de résidence moyenne de 3.46 ± 2.00 . Au total, 52.6% ne se sont jamais intéressés à la néphrologie comme choix de carrière, alors que 47.4% de ceux qui ont manifesté de l'intérêt pour la néphrologie, 11.5% seulement sont actuellement en néphrologie. La plupart de ceux qui s'intéressaient à la néphrologie ont changé d'idée par conséquent, sont maintenant des officiers d'un grade supérieur d'une autre sous-spécialité. Les facteurs les plus fréquemment identifiés étaient les conseils d'autres mentors ou de consultants supérieurs (80.8%), de la plupart des patients présentant une maladie rénale (79.5%) et un modèle positif en médecine de la néphrologie (76.9%). Les facteurs les moins identifiés étaient le prestige et le respect d'un néphrologue (35.9%) et les attentes de la société, les encouragements des pairs et les attentes de la famille (42.3%).

Conclusion: Il est urgent de prendre en compte les facteurs qui influent sur le choix de la néphrologie. Des mesures efficaces pour faire face à ces facteurs pourraient grandement contribuer à améliorer le choix de la néphrologie en tant que carrière par les résidents en médecine interne dans un proche avenir.

Mots-clés: choix de carrière, éducation, néphrologie, formation, Nigéria

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Received: April 3, 2019

Accepted: October 19, 2019

Published: December 30, 2019

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INTRODUCTION

Chronic kidney disease (CKD) has become a public health problem due to its increasing prevalence globally and associated high morbidity and mortality (1-3). The burden of CKD is more felt in developing countries like Nigeria where there is no health insurance to meet the huge financial demands the disease places on its sufferers and their families (4).

Despite the teeming population of patients with CKD, there is inadequate number of Nephrologists in Nigeria to cater of them. One of the most important components of developing nephrology services in many areas of the country is the training of nephrologists who will prioritise renal disease and seek out patients who need care, but the ratio of nephrologists per population in Nigeria is still one of the lowest in the world, making comprehensive delivery of renal care extremely challenging. Presently, there are about 400 nephrologists in Nigeria (against the expected number of 1000 nephrologists) per one million population and the available ones are domicile within the urban centres making the rural areas to suffer (5).

There are many challenges bedevilling the nephrology subspecialty training program in Nigerian including poor funding, lack of basic infrastructure, inadequate health personnel, migration of few trained personnel as well as declining interest in choosing nephrology as a career. The already inadequate health systems of sub-Saharan Africa have been badly damaged by the emigration of the health professionals. Migration is seriously affecting the sustainability of health systems in many developing countries.

A 1998 UN Conference on Trade and Development/WHO study estimated that 56% of all migrating doctors flow from developing to developed nations, while only 11% migrate in the opposite direction; the imbalance is even greater for nurses (6). Medical students and young doctors in training need motivated, well educated, articulate champions of both the health service and their speciality. Loss of well-trained, experienced personnel is perhaps the most serious aspect for the future in many countries (6). Many migrant health professionals probably intend to return to practice in their own countries - the problem for most countries, particularly in sub-Saharan Africa, is that many do not. In recent years, international migration of health professionals has not only grown considerably but is often permanent. Although many of these countries have made considerable efforts to train their own doctors, the rate of loss by migration

often outstrips production.

Interest in nephrology career among internal medicine residents within the country is declining (unpublished personal observations) similar to developments in western countries (7). In the latter, however, concerted efforts have focused on identifying factors discouraging residents from choosing nephrology, in order to reverse the trend and increase interest in nephrology careers (8-10). Few studies have examined attitudes of internal medicine residents toward nephrology careers locally. In the US, there are several proposed reasons for this declining interest. These include difficult-to-understand or unstimulating renal pathophysiology courses in medical school; disheartening inpatient experiences; few opportunities to experience the other aspects of nephrology careers like outpatient nephrology clinics, outpatient dialysis, kidney transplantation, and interventional nephrology; and perceived workload of nephrologists (11-13).

It is possible that there are common variables that play a role, including intellectual interest in the field, the presence or lack of a significant procedural component, earning potential, and ease of finding job opportunities. Furthermore, the experiences that students and trainees have are also likely to influence them as well, either positively or negatively.

MATERIALS AND METHODS

This cross-sectional study was conducted among the resident doctors in Internal Medicine in 4 randomly selected training institutions across the northern and southern part of Nigeria. The sample size of the study consists of all residents in Internal Medicine (junior and senior) who consented to participate in the study in the selected institutions.

We developed a self-administered questionnaire in the English language after a thorough review of relevant literature. Data were gathered through the two-part questionnaire. In the first part, demography, gender, age, marital status, and level of training were documented and the second section included 24 questions about factors that influence the residents' choice of subspecialty.

Questions were composed based on a Likert scale with five answers (very important, somewhat important, neutral, not very important, not at all important). The participants were asked to answer the questions on a Likert scale from 1 (very important) to 5 (not at all important)

The Human Research and Ethics Committee of

Osun State University approved the study protocol.

The data generated were recorded into SPSS software, then analysed and presented using the appropriate statistical format. Descriptive data were given as mean and standard deviation. Differences in distribution were analyzed by ANOVA and t-tests. The level of significance was taken as $p < 0.05$.

RESULTS

Socio-demographic Characteristics

A total of 78 respondents were interviewed in this study. The mean age of the respondent was 33.52 ± 3.52 . A higher proportion of the respondents were males (70.5%), 56.4% were senior registrars with the mean residency year of 3.46 ± 2.00 . Almost one-third of the hospitals where respondents were selected in an urban area (65.4%), 28.2% were in semi-urban and 6.4% were in rural areas. Most of the respondents were married (74.4%), 23.1% were single and 2.6% were divorced.

Choice of nephrology as a career choice among resident doctors

Table 1 shows the interest in nephrology as a career choice among the respondents. A total of 52.6% never had interested in nephrology as a career choice while of 47.4% that had an interest in nephrology only 11.5% are currently in Nephrology. Most of those who had interest in Nephrology changed their mind along the line and are now registrars or senior registrars in other subspecialty.

Table 2 shows the perceived factors affecting nephrology as a career choice among residents. The most common factors identified were advice from other mentors or old consultants (80.8%), outcome of most patients with renal condition (79.5%) and positive role model in nephrology medicine (76.9%). The least identified factors were prestige and respect accorded a nephrologist (35.9%) and societal expectation, peer encouragement and family's expectations (42.3%).

Shortcomings of Nephrology as a subspecialty

The most common shortcomings raised by the respondents were: inadequate and lack of standard diagnostic equipment, unavailable surgical interventions, expensive treatment which is unaffordable by the patients, high risk of death among patients and high demand for time.

Lack of scholarship opportunities for specialists, improper training and supervision,

lack of social support for renal opportunity, late presentation of patients, high patient workload with few doctors, harsh working environment for women and hectic nature of the posting were the other shortcomings of nephrology raised by the respondents.

Recommendations for increasing interest in nephrology

Provision of standard equipment and working tools, improvement in the quality of services, provision of health insurance for patients with renal care, building governmental interest, financial support and subsidized fees for renal patients and mentorship to resident doctors were the major recommendations for increasing interest in Nephrology.

Allocation of more training postings in the subspecialty in order to increase manpower, better training ambience, creating a work-friendly environment, improving medical education in nephrology for undergraduates and postgraduates and provision of incentives to doctors were the other recommendations.

DISCUSSION

There is a general decline interest in Nephrology initially documented in developed world (14). By inference the situation in developing countries like Nigeria is worse due to increase in number of patients that need renal care in the face of dwindling number of Nephrologists as well as mass exodus of doctors from Nigeria to other developed countries in search of better opportunities. In this multi-center study, we looked at the choice of Nephrology as a subspecialty of Internal Medicine and some of the factors that could stimulate the interest or discourage interns from specializing in Nephrology. This became necessary because of the growing population of patients with kidney diseases both acute and chronic in Nigeria, without a corresponding increase in the number of Nephrologists that will provide adequate and effective care.

Majority of the residents were not interested in nephrology as a career. The most common factors identified were advice from other mentors or senior consultants (80.8%), poor outcome of most patients with renal condition (79.5%) and lack of positive role model in nephrology medicine (76.9%). The least identified factors were prestige and respect accorded a nephrologist (35.9%) and societal expectation, peer encouragement and family's expectations (42.3%). This has demonstrated the

importance of role model and patient outcome as the most important factors that affected the career choice in Nephrology among the studied population. Studies in other fields have suggested that the presence of fellows in a particular field can positively influence the resident choice of that subspecialty. In a survey, 178 internal medicine residents from three academic medical centers about their interest in pulmonary and critical care medicine (PCCM) subspecialty training, some of the factors associated with higher resident interest in PCCM training, include observing a high sense of satisfaction among PCCM fellows and receipt of encouragement from PCCM fellows about joining the field (15). The data from Canadian residents suggests that lack of exposure to fellows may negatively impact a resident's decision to apply to a specialty (16).

Among obstetrics and gynaecology residents, the presence of a gynaecologic oncology subspecialty training program at a primary teaching hospital was associated with a 4-fold higher resident career interest in that subspecialty (17).

Also the greater number of the participants who were interested in Nephrology as junior residents eventually found themselves as senior registrars in other subspecialties (18). The change in the choice of career may be due to negative factors raised by the residents. The most common shortcomings by the respondents were: inadequate and lack of standard diagnostic equipment, unavailable surgical interventions, expensive treatment which is unaffordable by the patients, high risk of death among patients and high demand for time.

Lack of scholarship opportunities for specialists, improper training and supervision, lack of social support for renal opportunity, late presentation of patients, high patient workload with few doctors, women-harsh environment and hectic nature of the posting were the other shortcomings of nephrology raised by the respondents.

This study provided an insight into some of the reasons why internal medicine residents are gradually losing interest in choosing nephrology. Exposure to a field as a trainee may increase interest in that field; for example, in the Lorin study, residents who had spent more time in the intensive care unit were more likely to be interested in pulmonary/critical care (PCC) fellowship (15). Rotations during residency and medical school were cited as one of the most important experiences having a high impact on

their career decision. Working with internal medicine residency programs to increase resident exposure to nephrology may increase interest in nephrology careers.

Some students and residents may be dissuaded from nephrology due to the complexity and intellectual challenge of the field. In our study, 61.5% of residents agreed that personal intelligence and ability is required to understand complex renal pathophysiology. This is corroborated by a study from Jordan in which individual competence was a major factor in choosing a specialty (19).

In a study, internal medicine non-nephrology subspecialty fellows cited the complexity of renal pathophysiology and lack of procedures as reasons for not choosing nephrology (20). In another study, 78% of medical students felt that renal pathophysiology was too complex, irrelevant, or not interesting (21).

The focus of Nephrology educators should be towards effective teaching strategies to improve student and resident confidence and sense of mastery (22-23).

Some of the suggestions provided by the respondents in this study include provision of standard equipment and working tools, improvement in quality of services, provision of health insurance for patients with renal care, building governmental interest, financial support and subsidized fees for renal patients and mentorship to resident doctors were the major recommendations for increasing interest in Nephrology. In addition, allocation of more training postings in the subspecialty in order to increase manpower, better training ambience, creating a work-friendly environment, improving medical education in nephrology for undergraduates and postgraduates and provision of incentives to doctors were the other recommendations. Effective steps towards addressing the above factors may go a long way in improving the internal medicine residents' choice of Nephrology as a career in the near future.

Conflicting Interests: The authors declare that there is no conflict of interest.

Acknowledgements: The authors will like to appreciate the Resident Doctors that participated in this survey.

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Table 1: Interest in Nephrology as a career choice

Variable	n(%)
Neither chose nor interested	18(23.1)
interested and already a Registrar in nephrology medicine	8(10.3)
interested but already a Registrar in other internal medicine specialities	9(11.5)
Undecided but interested nephrology medicine	20(25.6)
Not interested but already an SR in other internal medicine Specialities	23(29.5)

Table 2: Perceived factors affecting nephrology as a career choice

	Important n (%)	Not important n (%)	Neutral n (%)
Personal factors			
Variable	48 (61.5)	10 (12.8)	20 (25.6)
Societal expectation, peer encouragement and family's expectations	33 (42.3)	21 (26.9)	24 (30.8)
Length and difficulty of the training period of Nephrologist	45 (57.7)	16 (20.5)	17 (21.8)
Work environment			
Future opportunity for promotion	45 (57.7)	15 (19.2)	18 (23.1)
Opportunities for performing a procedure (e.g. renal biopsy, dialysis, tissue typing)	56 (71.8)	12 (15.4)	10 (12.8)
Work-related hazards (infectious hepatitis, AIDS)	45 (57.7)	19 (24.4)	14 (17.9)
Workload	59 (75.6)	9 (11.5)	10 (12.8)
Prestige and respect accorded a Nephrologist	28 (35.9)	20 (25.6)	30 (38.5)
Residency training with allowance for maternity leave	39 (50.0)	17 (21.8)	22 (28.2)
Outcome of most patients with renal condition	62 (79.5)	5 (6.4)	11 (14.1)
Finance and Training opportunity			
Academic job opportunity in the university	38 (48.7)	14 (17.9)	26 (33.3)
Future opportunities like scholarships and frequent international travels	47 (60.3)	11 (14.1)	20 (25.6)
Probabilities establishing a private practice after completion	53 (67.9)	13 (16.7)	12 (15.4)
Annual income and Financial rewards of Nephrologist relative to other specialists	42 (53.8)	17 (21.8)	19 (24.4)
Free time for leisure of nephrologist	49 (62.8)	15 (19.2)	14 (17.9)
Availability of full-time Nephrologist	48 (61.5)	10 (12.8)	20 (25.6)
Availability of postgraduate college approved supervisor for nephrology medicine thesis in your centre	54 (69.2)	11 (14.1)	13 (16.7)
Approval for external posting for Part II by the hospital management	46 (59.0)	14 (17.9)	18 (23.1)
Mentorship			
Positive role model in nephrology medicine	60 (76.9)	6 (7.7)	12 (15.4)
Advice from other mentors/old consultants	63 (80.8)	9 (11.5)	6 (7.7)
Experience during rotation in medical school and residency	57 (73.1)	7 (9.0)	14 (17.9)