Original Article

THE PREFERENCE OF RADIOLOGY AS A POSTGRADUATE MEDICAL SPECIALTY AMONG FINAL YEAR MEDICAL STUDENTS OF USMANUDANFODIYO UNIVERSITY, SOKOTO

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ABSTRACT

BACKGROUND: Recruitment into medical specialties outside the core clinical departments remains a stumbling block to advancing medical practice in Nigeria.We set out to determine the factors influencing choice of diagnostic radiology as a field of specialization by the final year medical students in Usmanu Danfodiyo University College of Health Sciences,Sokoto.

METHODOLOGY: A descriptive cross sectional study was done.All the 2015/2016 session final year medical students of Usmanu Danfodiyo University were administered a structured questionnaire by the authors. SPSS version 20.0 was used for the result analysis. Univariate and bivariate analyses were done where appropriate to describe variables.

RESULTS: A total of 62 out of 65 final year medical students responded. Fifty one(82.3%) had interest in specializing after school. However, only 4(6.5%) of the students had interest in radiology. Male sex was found to be a predictor for the choice of radiology.

CONCLUSION: Career guidance/re-orientation and clarification of general misconception about radiology is necessary to avoid shortage of trained radiologists in the near future.

KEYWORDS: Career choice, Radiology, Medical students

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INTRODUCTION

Radiology as a postgraduate medical specialty has transformed and advanced rapidly over the past few years.[1]Radiology has broad spectrums of practice ranging from the field of diagnostic Radiology which includes interventional radiology, Radiotherapy and Nuclear Medicine. Diagnostic radiology uses variety of imaging techniques like the chest X-ray, ultrasound, magneticresonance imaging and computed tomography to answer specific clinical questions based on patients' clinical condition. However, interventional radiology has a direct role from minimally invasive procedures to complex procedures that may be necessary for life threatening medical conditions.[1]

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The practice of radiology as postgraduate medical training in Nigeria commenced with the establishment of the Faculty of Radiology in the National Postgraduate Medical College of Nigeria (NPMCN) in 1979 and West African College of Surgeons (WACS) in 1989.[2,3] In the past years and prior to the recent technological advancement in the field of radiology, the field was considered less prestigious and risky to venture into.[1] However, with this new development came a shift in interest although the field also became more challenging.[1]

There is dearth of doctors in some medical specialties in Nigeria. This affects those specialties that are outside the core clinical specialties of surgery, pediatrics, internal medicine and obstetrics/gynecology greatly.[4] Consequently, this has put strain on the human health resources across different level of health care in Nigeria. It also hinders the attainment of optimal health as contained in the Nigerian national strategic health development plan (NSHDP).[5]

Moreover, in Nigeria, as at 1st April, out of the 56 medical postgraduate training institutions in the country only 16 and 17 centers were accredited for the training of Radiology by the NPMCN and WACS respectively.[6, 7] However, out of this number, 15 have concurrent accreditation implying that overall 18 centers have accreditation in the country.

The aim of this study is to determine the career preference of final year medical students on how they perceive radiology, as a postgraduate specialty. The information obtained would guide policy makers and medical counselors on the proper allocation and plan of human resources as it affects health.

The study area; UsmanuDanfodiyo University, Sokoto was established in the year 1975.[8] The UsmanuDanfodiyo University Teaching Hospital is the reference hospital for training the medical students.[9]

Methodology

Structured questionnaires were self-administered by the authors to all the final year medical students for the2015/2016 session of College of Health Sciences, UsmanuDanfodiyo University Sokoto. A descriptive cross-sectional study was employed.

Data was collected and entered into a standardized data sheet. This was then extracted and analyzed using statistical package for social sciences (SPSSTM 20.0) version 20.0. Frequencies, percentages, tables and charts were used to present the results where necessary. The strength of association was measured using chi square or fisher exact test where appropriate. The level of significance was set at $p \leq 0.05$.

Result

Out of the total 65 medical students, only 62(95.4%) responded. There were 43(69.4%) males and 19(30.6%) females giving a male: female ratio of 2.3:1. Their age distribution is as shown in Table 1. Forty six (74.2%) of the students were single while 16(25.8%) were married. The number of years spent in medical school by the students were: 6 years by 45(72.6%), 7 years by 16(25.8%) and only 1(1.6%) student has spent 8 years.

Fifty one(82.3%) of the students intend to specialize after medical school with 8(12.9%) students not sure while the remaining 3(4.8%) did not want to specialize. The reasons given by the 3 students for not wanting to specialize were: long duration of training by 1(33.3%), difficult recruitment process by 1(33.3%) and impression of difficulty passing postgraduate examination by 1(33.3%). The career choice of the 51 students that want to specialize is as shown in Figure 1. Only 4(6.5%) of the students chose radiology as a career they intend to pursue.

The choices of various specialties by the students were due to the following reasons: personal interest by 24(41.4%), chance to help people by 14(24.1%), few specialistsin the country by 12(20.7%), prestige by 4(6.9%), availability of postgraduate training by 3(5.2%)and others by 1(1.7%). The reasons stated by the students for choice of radiology were; they like it by 2(50%), it is interesting by 1(25%) and lucrative by 1(25%). The following reasons were given by the students that lack interest in radiology; fear of radiation by 24(41.4%), not interested by 12(20.7%), not familiar with the work of a radiologist by 9(15.5%), involvement with too many specialties by 2(3.4%), no much active involvement in patient management by 7(12.1%), and others by 4(6.9%).

The functions of a radiologist were not known by 34(54.8%) while only 28(45.2%) of the students know the functions of a radiologist. Table 2 shows an association between the preference of radiology as a career and some factors with male sex significantly associated with the choice of radiology.

Table 1: Age and sex distribution of the final year medical students (n=62)

Age group (years)	Male (%)	Female (%)	Total (%)
20-24	2(3.2)	13(21.0)	15(24.2)
25-29	40(64.5)	6(9.7)	46(24.2)
30-34	1(1.6)	0(0.0)	1(1.6)
Total	43(69.3)	19(30.7)	62(100.0)

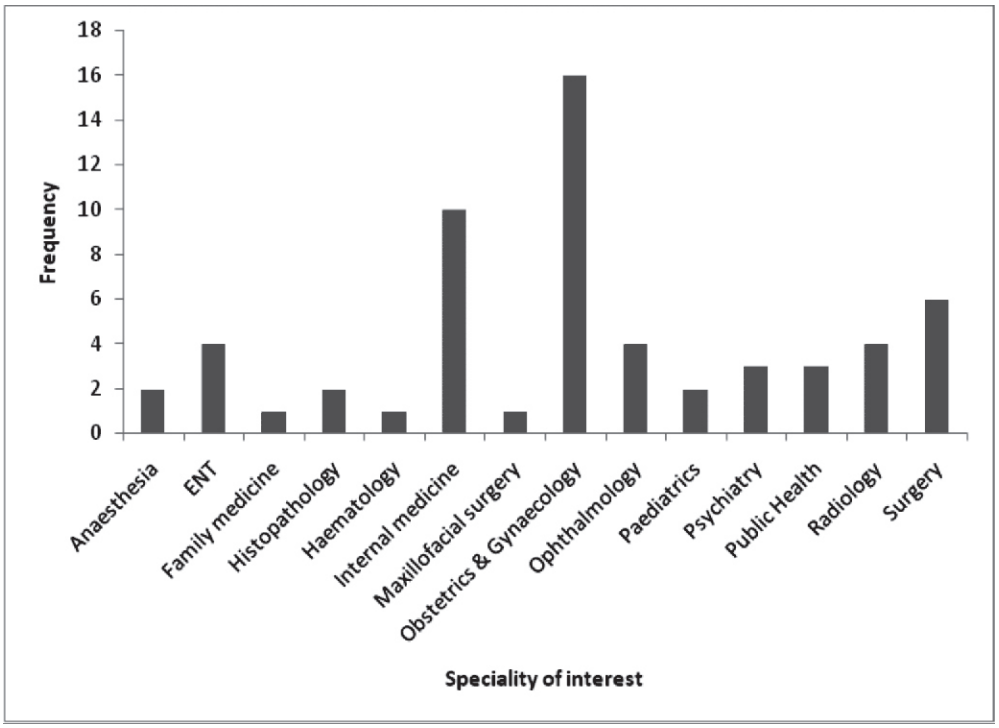

Figure 1: Career preference of final year medical students

Table 2: Association between preference of radiology as a career and some factors

Factors	**Choice of Radiology**			**Statistical analysis**
Sex	**Yes (%)**	**No (%)**	**Total (%)**	
Male	4(9.3)	39(90.7)	43(100)	*p*=0.000*
Female	0(0.0)	19(100.0)	19(100.0)	95% CI=0.000-0.3187
Age				
20-24	0(0.0)	15(100.0)	15(100.0)	*p*=0.201
25-29	4(8.7)	42(91.3)	46(100.0)	95% CI=0.110-0.227
30-34	0(0.0)	1(100.0)	1(100.0)	
Marital Status				
Single	4(8.7)	42(91.3)	46(100.0)*p*=0.169	
Married0(0.0)	16(100.0)	16(100.0)	95% CI=0.012-0.453	
Years in Medical School				
6	1(2.2)	44(97.8)	45(100.0)*p*=0.188	
7	(18.7)	13(81.3)	16(100.0)	95% CI=0.025-0.292
8	0(0.0)	1(100.0)	1(100.0)	

* Statistically significant

DISCUSSION

The functions of radiologists have metamorphosed over the years from dealing with simple X-rays to among others, the highly sophisticated magnetic resonance imaging. This is also in addition to interventional and clinical interactive roles. However, this advancing role of the radiologist has not coincided with an increasing interest for the career amongst our medical students. This study reveals that only 6.5% of the students have interest in radiology as a postgraduate medical career. This is a worrisome finding in a center that has virtually all the state of the art radiological equipment (ultrasound including Doppler, fluoroscopy, mammography, computed tomography and magnetic resonance imaging) while also excelling in various aspects of surgery. This implies that if the current trend is not reversed, we may end up having fewer radiologists in this part of the country. Consequently, these would have dire consequences on the proper diagnosis and delineation of lesions necessary for proper and precise treatment of diseases. This is similar to a finding by Mohammed *et al*[4] in University of Maiduguri among final year medical students where majority opt to specialize in the core clinical specialties.

The fact that most of the students feel it is necessary to specialize is heartwarming and comforting. It implies that at least even if the distribution is not even among the various specialties, we would not have shortage of specialists in the near future. A similar study by Adotey and Jebbin[10] among final year medical students in Port Harcourt also observed that majority of their students at that time wished to specialize after medical school. Among the students that did not wish to specialize in radiology, the major reason given by them was the fear of radiation. However, in the current trend of practice, hazardous radiation exposure is almost unheard of among practicing radiologists.

This is because the level of radiation currently in use and the radiation protection measures applied reduce the likelihood of developing cancer.[10,11,12] Shinji and colleagues reviewed epidemiologic data on cancer risks from eight cohorts of over 270, 000 radiologists and technologists in various countries and found only an increased risk of leukemia among the earliest radiologists practicing before 1950s when exposure was high. They concluded that there is no clear evidence of an increased cancer risk in medical radiation workers exposed to current levels of radiation doses.[13]

This study reveals a positive association between the choice of radiology and male sex. The likely explanation for this finding is that men are adventurous and even with the general misconception and fears about radiation from the study participants, male students choose to opt for career in radiology.

CONCLUSION

The findings from this study reveal that majority of the students intend to specialize after medical school with obstetrics and gynecology as the most preferred. This indicates a left shift in favor of the core clinical specialties. Few students opted for a career in radiology due to fear of radiation. In view of this, it is recommended that stakeholders must clarify the general misconception about radiation exposure in radiology and mentor-mentee relationship must be strengthened.

REFERENCE

1. Ming-Yen Ng, Nitin R. A career in Radiology. BMJ Careers 2012. Available from http://careers.bmj.com/careers/advice/view-article.html?id=20010062. (Accessed 06/03/2016).
2. National Postgraduate Medical College of Nigeria. Faculty of radiology curriculum and guidelines; a handbook for residents and their teachers, Revised 2013, NPMCN Publishers, Lagos. 2013; 14-28.
3. Nzeh D,Obajimi M, Sackey T, Abidemi A (Editors). Fundamentals of Radiologic Physics. First edition, Book builders: Ibadan, 2015.
4. Mohammed Y,Zailani SB, Galadima GB, Saidu K. Perception of final year medical students about the choice of Medical Microbiology as a specialty. Orient Journal of Medicine 2015; 27(1-2): 28-33.
5. Abdurrahman MB, Saidu K, Mohammed Y. The choice of chemical pathology as a specialty among final year medical students. Caliphate Medical Journal 2015; 3(1-2):2346-7193.
6. National postgraduate medical college of Nigeria. NPMCN Website. Available fromhttp://npmcn.edu.ng/ (Assessed on 08/03/2016).
7. West African College of Surgeons, (WASC website). Available fromhttp://www.wacscoac.org/index.php/accredited-institutions#radiology.(Accessed on 01/04/2016).
8. UDUSOK. UsmanuDanfodiyo University Sokoto Website. Available from http://www.udusok.edu.ng. (Assessed on 08/03/2016).

9. UsmanuDanfodiyo University Teaching Hospital, Sokoto (UDUTH website). Available from; http://uduth.org.ng/hospital profile.html. (Accessed 08/03/2016).
10. Adotey JM, Jebbin NJ. The choice of career by final year medical students: the Port Harcourt experience. Port Harcourt Medical Journal 2008; 2(2): 161-165.)
11. Sherwood T. 100 years' observation of risks from radiation for British (male) radiologists. Lancet 2001; 358:604.
12. Avoidance of radiation injuries from medical interventional procedures. International Commission on Radiological Protection publication no 85. Oxford, England: Pergamon, 2000.
13. Shinji Y, Kiyohiko M, Alice JS, Michele MD, Elaine R. Cancer Risks among Radiologists and Radiologic Technologists: Review of Epidemiologic Studies. RSNA 2004; 233(2):313-321.