ORIGINAL ARTICLE

Perception of final year medical students about the choice of medical microbiology as a speciality

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ABSTRACT

Background: In Nigeria and many other countries, many specialties had problems with recruitment of medical teachers outside the core clinical departments.
Objective: We aim at determining the factors that influence the choice of medical microbiology as a speciality among final year medical students in University of Maiduguri, College of Health Sciences.
Methodology: The study was a descriptive cross-sectional study. Data was obtained using a structured questionnaire that was administered among to the 2013/2014 session final year medical students of University of Maiduguri. Results were analysed using the SPSS, version 16.0.
Results: All the 134 final year medical students responded to the questionnaire, out of whom 91(68%) were males. A total of 115 (86%) of the students would want to specialise after school and only 6 (4%) would choose a career in medical microbiology.
Conclusion: Majority of the students believed it was necessary to specialize. However, only 4% of the students choose medical microbiology as a career. The North-East geo-political zone of Nigeria may suffer shortage of trained medical microbiologists if career orientation and mentor-mentee relationships are not strengthened.

Keywords: *Career choice, male, reasons for specialization, University of Maiduguri*

INTRODUCTION

Medical microbiology evolved as a postgraduate medical training in Nigeria with the establishment of the Faculty of Laboratory Medicine and Faculty of Pathology in the West African College of Physicians (WACP) in 1976and the National Postgraduate Medical College of Nigeria (NPMCN) in 1979, respectively.[1,2] The vision of both faculties in the respective colleges is to train Pathologists who will be able to cope with the rapid advances as well as have an in-depth knowledge of mechanisms of disease and diagnostic pathology.[1,2]

In much of sub-Saharan Africa, Nigeria inclusive, there is a dearth of professional medical microbiologists, because both within and outside the medical profession, medical microbiology is seen as less prestigious than other core clinical specialities.[3] The discipline of medical microbiology requires both clinical skills, as well as laboratory knowledge.[4] It consists primarily of four major areas of activity:

i. provision of clinical consultations, investigation, diagnosis and treatment, of patients suffering from infectious diseases
ii. establishment and co-ordination of infection control programmes across the hospital
iii. public health and communicable disease prevention/epidemiology, and also
iv. administrative/scientific management of the clinical microbiology laboratory.

In addition to these major activities, medical microbiologists are also involved in teaching at all levels, and in various aspects of research.[5]The various fields of medical microbiology in Nigeria cover the areas of bacteriology, virology, parasitology, mycology and immunology.[6]

In Nigeria, as at June 2012, only 18 out of the 56 training centres in Nigeria were accredited for medical microbiology by the NPMCN.[7]Career choice of newly qualified doctors contributes to the lack of adequate number of personnel in medical microbiology. This, impacts on the quality of care for patients, as well as, quality of testing in most public laboratories; in addition to the lack of fully trained teachers to man the medical schools. The study area, College of Health Sciences, University of Maiduguri, was established in 1977.[8]It is the only federal institution responsible for the training of undergraduate medical students in the North-East zone of Nigeria.[8]

The aim of this study is to assess the knowledge of final year medical students on how they perceive medical microbiology, as a postgraduate speciality.

SPECIFIC OBJECTIVES

1. To determine the number of students with interest in medical microbiology in the subject population
2. To find out the reasons(s) for choosing or not choosing medical microbiology as a speciality
3. To find out if there is gender predilection associated with choice of this speciality.

METHODOLOGY

Study Area: The study was carried out in the College of Health Sciences, University of Maiduguri.

Study Population: This comprises of all male and female undergraduates that are in the final year medical school for the 2013/2014 session.

Study Design: This was a cross-sectional descriptive study.

Sample Size and Sampling Method: The total population of the final year medical students of the 2013/2014 session.

Data Collection: A questionnaire was administered among all the final year medical students of College of Health Sciences, University of Maiduguri. The questionnaire was structured and administered by the authors.

Data Analysis: The data was analysed using Statistical Package for Social Sciences (SPSS) package version 16.0. Descriptive data are given as frequencies and percentages, and tables and charts were used to present results, where necessary. The strength of association was analysed using *Chi square* test. The level of significance was set at $p \leq 0.05$.

RESULTS

Out of the 134 medical students 91(68%) were males and 43(32%) were females. The distribution according to age is shown in *Table 1*. A total of 27(20%) of the students were married while 107(80%) were not married. The number of years spent in medical school by the students was: ≤5years by 24(18%) students, >5 to ≤6years by 94(70%) students, >6 to ≤7 years and >7years by 16(12%) students.

Table 1. Distribution of the 134 medical students according to age and gender

Age(Yrs)	Males (%)	Female(%)	Total (%)
20-24	19(14)	219(14)	38(28)
25-29	64(48)	15(11)	79(59)
30-34	7(5)	9(7)	16(12)
>35	1(1)	0(0)	1(1)
Total	**91(68)**	**43(32)**	**134(100)**

Figure 1. Intention to specialise after Medical school

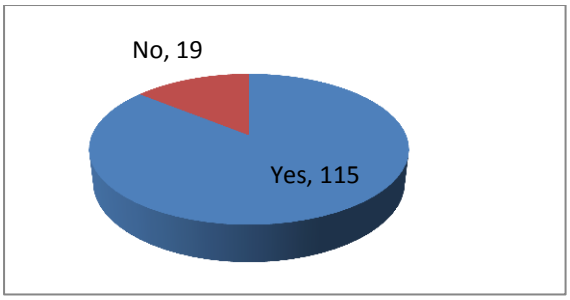


Figure 2. Reasons giving for not wanting to specialise after medical school

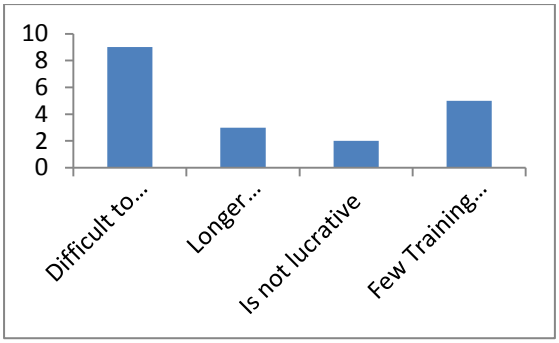
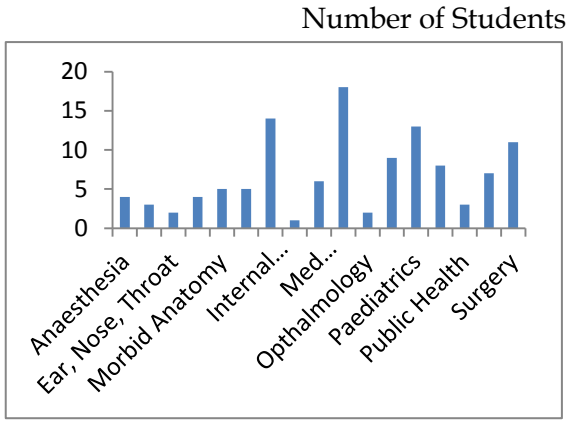


Figure 1 shows the intention of career specialization by the final year medical students. The reason given by students that do not want to specialise are as shown in *Figure 2.*

Among those that want to specialize; their various choices according to various fields of medicine are shown in *Figure 3,* and only 6(4%) of the students chose a career in medical microbiology. The reasons given for their interest were: personal interest, shorter duration of training and because it is more academic and research oriented.

Figure 3. Distribution of career choices amongst medical students



Career chosen

However, the reasons given by students who do not want to specialise in medical microbiology were: medical microbiologists work behind the scene, unwarranted competition with laboratory scientists, they would be out of touch with clinical / bedside practice and medical microbiology is not lucrative.

Eighty-nine (66%) of the students do not know the functions of medical microbiologists, while 45 (34%) of the students were able to correctly enumerate the functions of medical microbiologists which includes; running sexually transmitted infection clinics, participation in inter-departmental consults and reviewing patients, running, reviewing and approving laboratory results, surveillance of hospital acquired infections and finally, clinical liaison, result authorisation, infection control, and management activities.

Table 2: Association of some factors with the choice of medical microbiology as a career

Factors	Choice of Medical Microbiology			Statistical Analysis
	Yes (%)	No (%)	Total (%)	
Age (*n=134*)				
20-24	3(8)	35(92)	38(100)	$p = 0.687$
25-29	2(3)	77(97)	79(100)	CI=0.953-1.000
30-34	1(6)	15(94)	16(100)	
>35	0(0)	1(100)	1(100)	
Sex (*n=134*)				
Male	4(4)	87(96)	91(100)	$p = 0.101$
Female	2(5)	41(95)	43(100)	CI=0.083-0,201
Marital Status (*n=134*)				
Single	5(5)	102(95)	107(100)	$p = 0.008$*
Married	1(4)	26(96)	27(100)	CI=0.000-0.035
Number of Years in school (*n=134*)				
5	5(20)	19(80)	24(100)	$p = 0.027$*
6	1(1)	93(99)	94(100)	CI=0.014-0.318
7	0(0)	16(100)	16(100)	

*Statistically significant, i.e. $p \leq 0.05$

Table 2 shows the association between some factors and the career choice for medical microbiology. Single students were more likely to become medical microbiologists than married students ($p = 0.008$, *CI = 0.000-0.035*). More of the students that spent 5years in medical school chose medical microbiology than those that spent 6 or 7years ($p = 0.027$, *CI = 0.014-0.318*).

DISCUSSION

The clinical interactive role of medical microbiologists has been underestimated and the discipline is perceived as being confined to the laboratory, and in this study, majority of the students want to specialise in the four core clinical departments. This is similar to a study by Moslehuddin-Ahmed, *et al*, in Bangladesh to assess career choices among medical students which reported that majority of the students intended to specialize in established clinical specialties and subsequently, practice in major cities; more than half preferring to emigrate to other countries.[9] Basic medical subjects and service-oriented (lifestyle-related) and preventive/social medical specialties were found to be less attractive.[9] Several studies conducted in some Asian countries showed that medical students usually prefer the core clinical practices and subsequently, practice in urban areas posing challenges of acute shortage of teachers for medical schools in that part of the world.[10]

The reason for the choice of specialization in the core clinical specialties this study may not be unrelated to the perceived undocumented societal feeling in Nigeria that anything outside the core discipline makes you less of a doctor and our students did not want to be left out. The implication for this finding is that there would be dearth of sub-specialist medical doctors in North-East Nigeria if career guidance is not vigorously pursued for these students.

In this study only 4%of the students would wish to take up a career in medical microbiology, which is similar to the study by Moslehuddin-Ahmed, *et al*, in which medical microbiology was found to be less attractive as career preferences for medical students.[9]Seena and colleagues, also, had similar findings from a study on specialty choice among junior doctors in the United Kingdom (UK). [11]As an index of relative popularity, they examined the absolute number of applications for different specialties. Public Health and Laboratory Medicine were least popular specialties for UK graduates. The implication of this finding is that North-East Nigeria will suffer acute shortage of trained medical microbiologists if urgent actions are not taken. This would have dire consequences on the quality of medical teaching, quality of clinical laboratory results and patient management.

Figure 3 shows that, generally, the career choice specialities of medical microbiology, haematology, chemical pathology and histopathology, are not encouraging amongst the study subjects. This means that a lot needs to be done in terms of career guidance at medical students' level and beyond.

The finding in this study that students who were already married were more likely to choose medical microbiology as a career is not supported by previous research findings. However, it may be hypothesized that with marriage comes responsibility, and this group of students feel they have a calling to bridge the gap to avoid a looming disaster in medical education. It may, also, be due to the societal feeling that medical microbiology is less demanding as a career and hence this group may need more time with their families, informing their choice. Even though our study did not find any association with gender; a study done by Elma and colleagues to access career choice of final year medical students in South Africa found out that women favoured Paediatrics and Obstetrics/Gynaecology more than other specialities.[12]

The study findings hold some important implications which are not consistent with a good future for medical practice in our country. Nigeria needs more academics in basic medical science subjects to teach in the medical colleges, and more doctors to practise in the area of laboratory medicine, especially in medical microbiology.

CONCLUSION

Majority of the students agree that it is necessary to specialize, however, only a few students opted for medical microbiology as a career. Career guidance and mentorship could help in getting the students interested in careers that are considered unattractive and that belong to rare specialities.

LIMITATIONS OF THE STUDY

This study is limited by the fact that only final year medical students from a single university were appraised.

RECOMMENDATIONS

1. A multi- centre evaluation from other medical schools in Nigeria is needed to assess the actual choice of career from other students.
2. Career guidance for prospective graduates of medicine should be considered as a necessary curriculum by both the Medical and Dental Council of Nigeria (MDCN) and the National Universities Commission (NUC) to shortage of health personnel in certain specialties in the long term, medical microbiology inclusive.
3. Mentor-mentee relationship should be strengthened in all the subspecialties of medicine to influence the students' career choice.

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