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ARTICLE *in* THE NIGERIAN POSTGRADUATE MEDICAL JOURNAL · DECEMBER 2013

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Factors affecting interest in respiratory medicine as a subspecialty of choice: survey of internal medicine residents in Nigeria.

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Summary

Aims and Objectives: The objective of this study was to determine the factors that affect the interest in respiratory medicine (RM) as a subspecialty of choice among internal medicine residents in Nigeria.

Subjects, Materials and Methods: This was a cross-sectional study of 136 internal medicine residents recruited from seven teaching hospitals from January 2011 to June 2011. A semi-structured questionnaire that was self administered by residents was used to obtain socio-demographic information and factors affecting residents' interest in respiratory medicine.

Results: Out of 136 residents that completed the study, 78 (57.4 %) were junior residents (PG year 1-3) and 58 (42.6%) were senior residents (PG year >3). Thirty four (43.6%) junior residents and 21 (36.2%) senior residents considered respiratory medicine as a sub-specialty of choice. Only 2 (3.5%) of the senior residents were presently committed to RM. In the junior residents, interest in respiratory medicine was correlated with personal intelligence and ability (RR=2.58, ;95% confidence interval(CI): 1.16-7.07, p-0.01), availability of respiratory physician (RR=2.42; 95% CI 1.07-7.63, p-0.02) and postgraduate examiners in RM in training institutions (RR= (2.20; 95% CI 1.06-5.45, p-0.03), experience during rotation in medical school and residency (RR=2.11 ; 95% CI 1.11-4.21, p-0.03) and future annual income (RR=2.04; C:11.03-4.68, p-0.04). In the senior residents, interest in RM was correlated with the availability of postgraduate examiners in RM in training institutions (RR= 6.36; 95% CI 1.16-66.80, P-<0.01), future opportunity for scholarships and travel grants (RR= 4.23; 95% CI 1.19-25.92, p-< 0.01), personal intelligence and ability (RR= 3.41; 95% CI 1.16-13.87, p-0.01) and prospect for rapid elevation in career (RR=2.92; 95% CI 1.03-11.91, p-0.04). Provisions of modern facilities in training institutions, mentoring by senior colleagues and promotion of subspecialty by respiratory physicians were rated by the senior residents as the most important ways of increasing interest in respiratory medicine and making it a specialty of choice.

Conclusion: The interest in respiratory medicine among internal medicine residents is low and decline as their level of training advances. The factors affecting the interest in respiratory medicine have been highlighted and the policy makers need to understand, and if possible modify these factors by formulating appropriate changes to our training programs so as to increase future numbers of respiratory physician.

Key Words: respiratory medicine, subspecialty, career, residents, interest, Nigeria

Introduction

Respiratory medicine (RM) is one of the core subspecialties of internal medicine that deals with respiratory diseases¹. A doctor who specializes in respiratory disease is known as a pulmonologist, a chest medicine specialist, a respiratory medicine specialist, a respirologist or a thoracic medicine specialist depending on the country of practice¹. Respiratory diseases are major cause of morbidity and mortality worldwide and constitute up to 10.2% of emergency room admission in Nigeria². In view of the changing demographics, indoor pollution, HIV pandemic and tobacco smoking, the burden of chronic respiratory diseases is projected to increase in future³⁻⁴. With the substantial increase in the population of Nigeria in the last decades, a further increment in the respiratory morbidity is expected over next few years. To effectively manage this expected increase in respiratory conditions, there is need to have commensurate increase in the level of facilities and human resources in the health care system. In 2009, a national survey conducted to determine the available facilities and resources for managing asthma in Nigerian tertiary hospitals⁵ showed that the median number of respiratory physicians was 0 with a range of 0–3. The infrastructures and human resources for management of asthma in Nigerian tertiary hospitals were inadequate to support the standard internationally endorsed for respiratory care⁵. Unpublished list of adult respiratory physicians currently working in the country obtained from the Nigerian thoracic society (NTS) was forty five. This inadequacy highlights the need to increase the number of the respiratory physicians. One way to rectify this shortage is by encouraging more residents to pursue a postgraduate training in respiratory medicine. Several studies have been conducted among undergraduate medical students and medical interns in Nigeria to determine the factors that affect the choice of career and specialty⁶⁻¹⁰. There is paucity of data on the factors that determine choice of subspecialty among residents in internal medicine training in sub-Saharan Africa and other resource-poor nation. The objective of this study was to determine the factors that are affecting interest in respiratory medicine as a subspecialty of choice among internal medicine residents in Nigeria. The outcome of this study is very crucial to understanding the perception of the subspecialty among residents, and may also be used to modify their training in order to increase future number of respiratory physicians.

Subjects, Materials and Methods

Study setting and Design

This was a cross-sectional study of resident doctors in internal medicine training in University Teaching Hospitals in Nigeria. The study was carried out from January 2011 to June 2011. The country is located in West Africa and is divided into 6 geopolitical zones. The country has a population of 145 million, with an annual growth rate of 2.2%.

Sample selection

This survey was conducted in five of the six geopolitical zones which can be considered a true representative sample of Nigeria. A total of 10 teaching hospitals were selected from the five geopolitical zones for the study but only seven hospitals took part in the study. The total number of selected hospitals varies in each geopolitical zone as the selection of hospital was done on the basis of availability of residency program for the training of internist and respiratory physician and the proportion of residents on external medical rotation outside the hospital (See appendix for the list of selected hospitals). All the resident doctors in the selected hospitals were recruited for this study.

Survey instrument

We used a pre-tested, semi-structured questionnaire that was prepared using survey instruments from similar study among surgical residents in United State of America¹¹. The instrument was adapted to reflect the local factors based on the contributions received from resident doctors at the University of Ilorin teaching hospital where the pilot survey was carried out. The instrument was piloted among 10 doctors to ascertain if the questions were acceptable and the wordings well understood by the respondents. Ambiguous questions were removed or rephrased for clarity. (See the additional file 1 for the questionnaire.) All the resident doctors in the selected hospitals working as registrars and senior registrars were recruited for this study. The selected doctors signed an informed consent form to participate in the study. The investigators coordinated the administration of the questionnaires. The questionnaire was self administered by the participating residents. Socio-demographic information of each participating resident and data regarding location of practice, level in training (Junior-1st-3rd years of training or senior residency-4-6th year) and number of children were obtained. In addition, participating residents were requested to respond to questions on 22 items that influence their interest in considering a carrier in respiratory medicine. The responses to the questions were ordered on 5 points Likert items of; (a)very important, (b)somewhat important, (c)neutral, (d)not very important, (e)not at all important. All the information collected was treated anonymously and in absolute confidence.

Data analysis

Data obtained were analysed using SPSS statistical software version 15 (SPSS Inc., Chicago, IL, USA). Frequency and descriptive statistics were used to examine the general characteristics of the residents. The participants were stratified into two groups on their basis of the interest in respiratory medicine and level of training. One way analysis of variance (ANOVA) and bivariate analysis were used to determine the significant factors associated with level of interest in RM. Only those factors

that were significantly associated interest in RM were entered in multivariate analysis. Data from Likert scales was reduced to the nominal level by combining all items into two categories of important and not important responses. Multivariate analysis was performed to determine the strength of association between interest in RM and associated factors by level of training. P value of < 0.05 was considered statistically significant.

Results

A total of 212 residents in internal medicine training programme in Nigeria were approached to participate in the study. Of the 212 residents, only 136 completed the study giving a response rate of 64 %. The mean age of the residents was 33.5 ± 4.0 years. Ninety-six (70.6%) of the residents were males and 40 (29.4%) were females. Seventy eight residents (57.4 %) were junior residents (JR) and 58 (42.6%) were senior residents (SR). There was no significant association between socio-demographic characteristics of the residents and their level of interest in RM (Table i). Thirty four (43.6%) of the junior residents were interested in RM, while 21 (36.2%) of the senior residents were interested in RM (Figure 1). Only 2 (3.5%) of the senior residents were pursuing a sub-specialty training in respiratory medicine (Figure 2). In this study, we also stratified the participants by level of training to determine the significant factors that influence the interest of residents in RM. In the junior residents, personal intelligence and ability was leading factor (RR=2.58; 95% Confidence interval(CI): 1.16-7.07, p=0.01) followed by availability of respiratory physician (RR=2.42; 95% CI 1.07-7.63, p=0.02) and postgraduate examiners in RM in training institutions (RR= 2.20; 95% CI 1.06-5.45, p=0.03), experience during rotation in medical school and residency (RR=2.11; 95% CI 1.11-4.21, p=0.03) and future annual income (RR=2.04; 95% CI 1.03-4.68, p=0.04) (Table ii). In the senior residents, the availability of postgraduate examiners in RM in training institutions was the leading factor associated with interest in RM (RR= 6.36; 95% CI 1.16-66.80, P<0.01), followed by future opportunity for scholarships and travel grants (RR= 4.23; 95% CI 1.19-25.92, p= <0.01), personal intelligence and ability (RR= 3.41; 95% CI 1.16-13.87, p=0.01) and prospect for rapid promotion in career (RR=2.92 95% CI 1.03-11.91, p=0.04). Future academic prospects, opportunity for performing a specialty procedures (hand on experience), work related hazards in respiratory medicine, length of subspecialty training and management outcome of patients with respiratory condition were not significantly associated with interest in respiratory medicine at different level of training. We also sought the opinions of all the senior residents on the shortcomings and ways of improving interest in the respiratory medicine. Provision of modern training facilities in training institutions was rated as the most important way of increasing interest in respiratory medicine by 100% of SR pursuing RM and 42.8% in pursuing other subspecialty. It was closely followed by

mentoring (50.0%) in the respiratory SR and promotion of specialty (7.1%) by non respiratory SR (Table iii).

Table i: Socio-demographic distribution of residents according to interest in RM

Characteristics	Interested n = 55 (%)	Not interested n = 81 (%)	Total n=136 (%)	P values
Age range (yr)				
25-30	54.5	45.5	22(16.2)	
31-40	37.8	62.2	110(81.6)	p=0.33
>40	33.3	66.7	3(2.2)	
Sex				
Male	39.6	60.4	96(70.6)	p=0.75
Female	42.5	57.5	40(29.4)	
Marital status				
Married	42.9	57.1	85(62.5)	p=0.69
Others	40.0	60.0	51(37.5)	
Status in training				
Junior residency(JR)	43.6	56.4	78(57.4)	p=0.39
Senior residency(SR)	36.2	63.8	58(42.6)	
No of children				
0	44.1	55.9	59(43.4)	
1-2	37.8	62.2	45(33.1)	p=0.75
≥3	37.5	62.5	32(23.5)	
RM-Respiratory medicine				

Table ii. Factors affecting the interest of internal medicine residents in respiratory medicine by level of training

Factors	Adjusted RR Junior Resident	Adjusted RR Senior Resident
Personal intelligence and ability	2.58(1.16-7.07)*	3.41(1.16-13.87)*
Future academic carrier	1.49(1.09-3.04)	-
Prospect for rapid promotion in career	-	2.92(1.03-11.91)*
Future opportunity for scholarships and international travel grants	1.45(1.16-2.98)	4.23(1.19-25.92)*
Length of sub specialty training	1.28(0.02-2.29)	-
Annual income & Financial reward	2.04(1.03-4.68)*	-
Availability of respiratory physician in training centres	2.42(1.07-7.63)*	-
Availability of postgraduate examiners in RM in training centres	2.20(1.06-5.45)*	6.36(1.16-66.80)*
Experience with rotation in medical school & residency	2.11(1.11-4.21)*	-

*P<0.05. Adjusted for age, sex, marital status and number of children

Table iii. Senior Residents Rating of Options for Increasing Interest in respiratory medicine

Options for Increasing Interest	Non Respiratory SR n=56	Respiratory SR n=2
Provision of better training facilities	42.9	100.0
Promotion of specialty by increasing knowledge about the scope of practice	14.3	-
Mentoring	7.1	50.0
Foregin training /observership	1.8	-
Values are expressed in %		

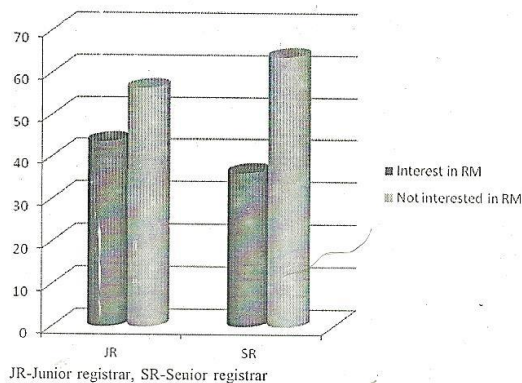


Figure 1: Interest in respiratory medicine by level of training

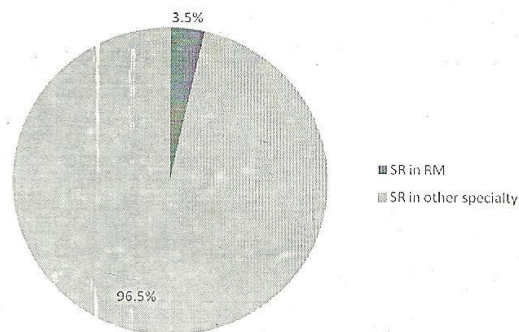


Figure 2: Senior residents (SR) pursuing sub specialty training in respiratory

Appendix INFORMATION SHEET

WHAT IS THE STUDY ABOUT

The study aims at determining the factors that are influencing the interest in respiratory medicine as a specialty of choice among residents in department of medicine. The perceptions of the resident doctors are very crucial to understanding and formulating appropriate changes to our postgraduate training programs.

WHAT IS EXPECTED OF YOU IF YOU AGREE TO PARTICIPATE

- 1) It is expected that those who agree to participate will complete a self administered questionnaire
- 2) **YOUR PARTICIPATION IS VOLUNTARY**
Your participation is voluntary and you may withdraw at any phase of the study.

CONFIDENTIALITY

The information collected from you will be treated in absolute confidence. No part or whole of such information shall be divulged to anybody except the investigators. We owe it a duty to keep your records absolutely secret.

CONSENT

I hereby give consent to participate in this study

Sign.....

Date.....

Indicate your response by underlying or bolding one of your response in letter a to e.

Age..... Gender Male / Female

Clinical year Junior registrar Senior registrar

No years in residency training.....

Hospital location urban semi-urban rural

Marital status: Single, divorced, or widowed Married
Children, No.: 1 2 3 4 5 6 > 6

1. Have you ever been interested in specializing in respiratory medicine?
 - a) Neither choose nor interested in respiratory medicine
 - b) I'm interested and already an SR in respiratory medicine
 - c) I'm interested but already an SR in other internal medicine Specialties.
 - d) Undecided but interested respiratory medicine
 - e) Not interested but already an SR in other internal medicine Specialties
2. How important will you rate the contribution of your personal intelligence and ability toward choosing respiratory medicine as a specialty of choice
 - a) very important
 - b) somewhat important
 - c) neutral
 - d) not very important
 - e) not at all important
3. How important will you rate the contribution of academic job opportunity in the university toward choosing respiratory medicine as a specialty of choice
 - a) very important
 - b) somewhat important
 - c) neutral
 - d) not very important
 - e) not at all important
4. How important will you rate the contribution of future opportunity for promotion toward choosing respiratory medicine as a specialty of choice
 - a. very important
 - b. somewhat important
 - c. neutral
 - d. not very important
 - e. not at all important
5. How important will you rate the contribution of future opportunity like scholarships and frequent international travels toward choosing respiratory medicine as a specialty of choice
 - a. very important
 - b. somewhat important
 - c. neutral
 - d. not very important
 - e. not at all important
6. How important will you rate the contribution of Societal expectation, peer encouragement and family's expectations toward choosing respiratory medicine as a specialty of choice
 - a. very important
 - b. somewhat important
 - c. neutral
 - d. not very important
 - e. not at all important
7. How important will you rate the contribution of positive role model in respiratory medicine toward choosing respiratory medicine as a specialty of choice
 - a. very important
 - b. somewhat important
 - c. neutral
 - d. not very important
 - e. not at all important
8. How important will you rate the contribution of advice from other mentors/old consultants toward choosing respiratory medicine as a specialty of choice
 - a. very important
 - b. somewhat important
 - c. neutral
 - d. not very important
 - e. not at all important
9. How important will you rate the contribution of Opportunities for performing a procedure (e.g.

- Bronchoscopy, pleural biopsy, lung transplant) toward choosing respiratory medicine as a specialty of choice
- very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
- How important will you rate the contribution of Work-related hazards (infectious hepatitis, AIDS, Tuberculosis) toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of Length and difficulty of the training period of respiratory physician toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of probabilities establishing a private practice after completion of training toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of annual income and Financial rewards of respiratory physician relative to other specialist toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of free time for leisure of respiratory physician toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of workload toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of your experience during rotation in medical school and residency toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of the prestige and respect accorded a respiratory physician/pulmonologist toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of availability of full time respiratory specialist toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of availability of postgraduate college approved supervisor for respiratory medicine thesis in your centre toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of approval for external posting for Part II by the hospital mgt toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of residency training with allowance for maternity and paternity leave toward choosing/not choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - How important will you rate the contribution of outcome of most patients with respiratory condition toward choosing respiratory medicine as a specialty of choice
 - very important
 - somewhat important
 - neutral
 - not very important
 - not at all important
 - What are the short comings of respiratory medicine as a sub specialty
 - What are your recommendations for increasing interest in respiratory medicine

Discussion

In Nigeria, several studies have been conducted among medical students, interns and general practitioners, but none among the internal medicine residents to really explore their perception and preference for a particular sub specialty⁷⁻¹⁰. The results of this study showed a declining interest in respiratory medicine from 43.6% among junior residents to 36.2% among senior residents as the level of training progresses. Eventually the interest declined further as only 3.5% of the senior residents chose and pursued fellowship training in RM. This result is very similar to a study in United States of America that demonstrates that 41% seriously considered a pulmonary and critical care medicine (PCCM) fellowship during their residency, yet only 3.4% actually chose to enter pulmonary and critical care medicine (PCCM) subspecialty training¹². The trend observed may be due to the changing dynamics in those factors that attract and influence the choice of specialty during transition from junior to senior

residency. The interest in respiratory medicine which declined with level of training may warrant the need to pay much attention to the factors associated with the interest of senior resident in RM and the subspecialty shortcomings.

There was no association between socio-demographic characteristics of the residents and their level of interest in RM. Ohaeri *et al*, in a study of clinical year student of University of Ibadan also found no association between socio-demographic factors and specialty choice¹³. A similar study in Canada has reported that males are more likely to choose procedure based specialties like respiratory medicine, cardiology and gastroenterology than non procedure based specialties like geriatrics, general internal medicine, rheumatology and endocrinology and are also more concerned with the reputation of the specialty as well as the anticipated salary¹⁴.

Personal competence of the residents

Personal competence was considered as the most important factor among junior residents that influences their interest in RM. Furthermore, it was also an important factor in the senior residents'. This finding is similar to studies among pre-residency medical graduates in southeastern Nigeria⁷ and medical students in Jordan¹⁵. A resident would prefer a specialty that matches his own personal competence that will ensure less challenges and job satisfaction. Other subspecialties that were considered to be personally challenging might be rejected. The extent to which self rated competence impacted on the choice of specialty need further investigation.

Availability of postgraduate examiners in RM in training institutions

The survey also revealed that the availability of a respiratory physician who examine at the postgraduate college was the most important factor considered by the senior residents as influencing their interests in RM. Similarly, it was also reported by the junior residents in this study. This trend has not been observed elsewhere in literature. Residents that have experienced examiner are likely to be well guided, properly supervised and groomed to pass their final fellowship examinations. Secondly, the residents might not need to experience the discomfort of relocation, inadequate family support and abandoning their family to do an external posting in accredited institutions with highly experienced examiners.

Future opportunity for scholarships and international travel grants

Future opportunity for scholarships and international travel grants was the second important factor reported by the senior residents as influencing their interest in RM taking into consideration that the study was conducted in poor resource setting. This trend is similar

to a survey in Pakistan which reported that 82% of the trainees in internal medicine wanted to proceed abroad for further training¹⁶. These results might be due to desire to update their medical knowledge, skills and improve quality of care. International travel grant also help in exchange of ideas with experts from other parts of the world.

Experience during rotation in medical school and residency.

The junior resident's experience during medical school clerkship and residency rotations also affected their interest in respiratory medicine. This pattern was not observed among the senior residents. This finding is in agreement with other studies^{14, 17-21}. Internal medicine residents can be positively or negatively impacted by their teachers. Students and trainee that have opportunity of working with the innovative and dedicated tutors during their clerkship are more likely to choose an internal medicine residency. Over time, specialty choice can evolve and fluctuate during the course of training, being affected mainly by interest aroused during the clinical postings.

Anticipated annual income

The anticipated annual income was also found to influence the interest of junior resident in RM unlike the senior resident. This is observation is similar to other studies especially in junior doctor^{14, 15, 22}. The societal expectations of doctors are very high and to meet up with all the personal needs and have a good quality of life, one requires a very high annual income.

Prospect for rapid promotion in career

In this study, the prospect for quick elevation in their career was observed among the senior residents. Rapid promotion in career may lead to job satisfaction, material rewards, the need to meet up with the societal expectation and financial commitments.

Senior Resident Rating of Options for Increasing Interest in respiratory medicine

It was discovered that the provision of better training facilities in postgraduate training institutions, mentoring by senior colleagues and promotion of speciality by increasing knowledge about the scope of practice of respiratory physician were rated as the most important way of addressing the shortcomings and increasing Interest in respiratory medicine. The provision of modern facilities would afford the respiratory physician the opportunity to perform more procedures like bronchoscopy, pleuroscopy, video assisted thoracoscopy and interventional studies. The ability of the specialist to offer total care gives him a sense fulfillment, as he considers himself qualified to provide a care that is comparable with what his colleagues are offering in other parts of the world. The modern day RM practice is procedure oriented like cardiology and gastroenterology.

While most centres could boast of basic equipments like gastroscope and echocardiography machine only few centres have functioning fiberoptic or videobronchoscope. The lack of opportunity to perform or observe these procedures in specialty often worsens the perception of the specialty among the rotating residents¹². The opportunity to do procedures is significantly more important to residents choosing procedure based specialties and in some part of the world, residents are gradually moving to procedure based specialty¹⁴. In addition, a well trained respiratory physician who is very competent in specialist procedures could increase his annual income by establishment of private practice or be an adjunct staff to many hospitals. These observations are in agreement with study elsewhere where financial considerations from reimbursement due to procedure makes such practices more appealing than patients centered practices^{14, 23-25}. Ironically a study in USA reported that too much procedure in one specialty was disuading residents from making it a carrier of choice²⁶. In the opinion of the 50% residents in respiratory medicine, mentorship ranked second in ways of improving interest in RM. Our result is similar to studies among internal medicine residents in North America¹²⁻¹⁴. Studies have shown that lack of exposure to specialist and negative perception of specialist during general internal medicine training could negatively impacted a residents' decision to apply to a specialty¹⁴. Lack of knowledge on the scope of practice of respiratory physician was also cited as a short coming of the subspecialty. Promoting the specialty among doctors by widening scope of practice was reported as a way of increasing interest in it. While the practice of RM has witnessed a considerable growth and development in last half of a century worldwide, same cannot be said for Nigeria and most countries in Africa. Respiratory medicine is beyond the study of tuberculosis, pneumonia, asthma and COPD; RM physicians need to widen their scope of practice to include critical care and thoracic oncology, sleep medicine as it is done in the developed countries. Unfortunately, there is no study to compare with our finding, however we believed this pattern is likely to be similar to other developing nations.

Limitation and strength of study

The study was able to determine the factors that influence the choice of internal medicine residents in pursuing a career in respiratory medicine in a multicultural society of a developing country. Compared to previous study on choice of specialty, this data was obtained from five out of the six geopolitical zones and could be said to be true representation of the views of trainees in internal medicine residency programme in Nigeria. The limitation of the study is non validation of the survey instrument used in the study. Although pre testing of the survey instrument was done to remove any ambiguous item and ensure clarity of the wordings, no test validity was performed.

In conclusion the study has highlighted the low level of interest in RM among internal medicine residents in Nigeria. The interest in respiratory medicine also declined as their level of training advanced. There is a need to provide the required facilities and widen the scope of the subspecialty practice to make it intellectually stimulating and rewarding to meet the expectations of modern day residents and future physicians.

Recommendation

The factors affecting the interest in respiratory medicine have been highlighted and the policy makers need to understand, and if possible modify these factors by formulating appropriate changes to the training programs so as to increase future numbers of respiratory physician.

Acknowledgement

The authors hereby thank the residents who took part in the study in all the seven tertiary hospitals in Nigeria.

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