



Future Career Plans of Final Year Medical Students in Medical Schools of Southeast Nigeria: Implications for Policy

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ABSTRACT

Background: The doctor population ratio in Nigeria is low when compared with advanced countries. The study was designed to determine the future career plans of final year medical students in medical schools of southeast Nigeria and its policy implications.

Methods: This was a descriptive cross-sectional study. All final year medical students in six medical schools of southeast Nigeria who were willing to participate were included in the study. Questionnaire was self-administered. Chi square test of statistical significance was used in the analysis and the level of significance was determined by a *p* value of < 0.05 .

Results: The response rate was 86.7% and 457 medical students participated in the study. The mean age of respondents was 25.5 ± 2.9 years and 57.1% were males. Majority of the students, 89.5% intend to pursue specialist medical training after graduation and the highest proportion, 47.9% preferred to specialize in Nigeria while 32.8% opted for countries outside Africa. On choice of sector,

35.2% wanted to combine public and private practice while 24.9% wanted to lecture in medical schools. Majority, 67.6% planned to live and work in Nigeria after specialization. A significantly higher proportion of the respondents intend to specialize in Surgery outside Nigeria, (63.3%) when compared with those who intend to do the same specialization in Nigeria, 36.7%, ($p < 0.001$).

Conclusion: Majority of the students preferred specialist training after graduation with a preference for Nigeria. Also, majority planned to settle and work in Nigeria after specialist training. There is the need to meet the expectations of these students and this will necessitate increasing the Residency training opportunities in Nigeria and plans to retain the doctors willing to practice in Nigeria after training. The students should consider going into joint ventures after graduation and use that as means of reducing the number of people going out of the country every year for specialist medical treatment.

Key words: Career plans, medical student, medical school, southeast Nigeria.

INTRODUCTION

Estimates by the World Health Organization have it that the doctor population ratio in Nigeria is 3.76 per 10,000 population. For the

United Kingdom it is 28.3 per 10,000 population and for the United States it is 25.7 per 10,000 population.¹ It has already been established that the continent of Africa has a





critical shortage for health workers. This is because even though the continent bears 24% of global disease burden it could only account for 2% of the global health workforce.² As a follow up to this, it was revealed that Africa needs an additional 167,000 physicians by 2015,³ to meet two important goals as expressed in a global report which included 80% measles immunization coverage and 80% of live births attended by a skilled health worker.²

It is expected that the demand for health workers will increase especially in the developed world based on aging populations and increasing burden of chronic disease like in the United States of America.^{4,5,6} Based on this, physician migration from sub-Saharan Africa to the developed countries will be on the increase. For example, in July 2017, the General Medical Council of United Kingdom, revealed that over 4,765 Nigerian doctors are working in the United Kingdom. This was estimated as 1.7% of the total medical workforce in the United Kingdom.⁷ Even more worrisome is the result of a survey among medical doctors trained in Nigeria of which 88% of those resident in Nigeria indicated that they are searching for job opportunities outside Nigeria.⁸

The major reasons why doctors leave Nigeria for greener pastures included better facilities and work environment, higher remuneration, career development and professional advancement and better quality of life.⁸ The Medical and Dental Council of Nigeria has registered 72,000 physicians in Nigeria of which an approximate 35,000 of them are practicing in Nigeria. This same agency of Government estimates that about 20,000 medical doctors of Nigerian origin are

practicing outside the country.⁸ It has been postulated that this continual exit of physicians from countries like Nigeria necessitates that career choices of medical students should be given adequate attention.⁹ It has been established that the higher the density of health workers in an area, the better the health outcome of that population.^{10,11,12} Expectedly, it is the career interest of present undergraduate medical students that will determine the future composition of the physician workforce.¹³

Nigeria has been regarded as having one of the largest concentration of human resources for health in Africa.¹⁴ The country has 41 accredited medical schools including seven privately owned universities,¹⁵ and this number will continue to increase with time. It has been suggested that with good management of these institutions, Nigeria may be able to accommodate the shortfall from doctors expected to migrate to the industrialized countries.⁹ Unfortunately, there has been poor planning of medical services in the country. For example, newly graduated doctors spend years doing nothing before their one year mandatory internship. Thus there have been calls for increased intake of medical graduates willing to pursue specialist training in tertiary and other health institutions that offer postgraduate medical training in Nigeria.^{9,16} This was based on the observation that more medical graduates intend to pursue specialist medical training and that it will be counter-productive to delay their aspirations. This study was designed to determine the future career plans of final year medical students in medical schools of southeast Nigeria and its policy implications.



METHODS

Setting

The study was conducted in medical schools in southeast Nigeria. This is one of the six geo-political zones in Nigeria and it is made up of five states including Abia, Imo, Ebonyi, Anambra and Enugu states. The zone has a population of 16,381,729 people,¹⁷ within a total area of 28,987 square kilometres.¹⁸ The inhabitants are mostly of Igbo ethnic nationality and are predominantly Christians. The southeast zone of Nigeria currently has nineteen universities comprising five federal and five state universities while the remaining nine are privately owned. At the time of this study, Medicine was accredited for study in six universities in the zone and all the six medical schools were included in the study. Two of the six universities belong to the Federal Government of Nigeria and they include Nnamdi Azikiwe University Awka, and the University of Nigeria, Nsukka, which was established in 1960, and is Nigeria's second oldest university. The state owned universities that were included in the study included that of Abia, Imo, Ebonyi and Enugu states.

Study Design

This was a descriptive cross-sectional study.

Study Participants

The study population were final year medical students in medical schools of southeast Nigeria who gave consent to participate in the study. Four hundred and fifty seven students in the six medical schools participated in the study giving a response rate of 86.7%. The participating medical students included University of Nigeria, Nsukka, (132 students; response rate 95%),

Nnamdi Azikiwe University Awka, (79 students; response rate 82.3%), Abia State University Uturu, (67 students, response rate 80.7%), Ebonyi State University Abakaliki, (79 students, response rate 90.8%), Enugu State University of Science and Technology Enugu, (37 students; response rate 74%) and Imo State University Owerri, (63 students; response rate 87.5%).

Study Instrument

The study instrument was a pre-tested, semi-structured questionnaire which was designed by the researchers. The questionnaire was self-administered. Information was obtained on the socio-demographic characteristics of the students, their country of choice for Residency training and also country of choice for medical practice after the training.

Data Analysis

Data entry and analysis were performed using Statistical Package for Social Sciences (SPSS), statistical software version 22. Frequency tables and cross tabulations were generated. Chi square test of statistical significance was used in the analysis and level of statistical significance was determined by a p value of less than 0.05.

Ethical Approval

The research was reviewed and accepted by the Health Research and Ethics Committee of University of Nigeria Teaching Hospital Ituku-Ozalla, Enugu, Nigeria. The students were required to sign a written informed consent form before participating in the study. The nature of the study, its relevance and the level of their participation were made known to them. They were also assured that all information as would be provided in the



questionnaire will be treated confidentially and anonymously.

RESULTS

Table 1: Socio-demographic characteristics of respondents

Variable	n= 457 (Frequency)	Percent (%)
Age of respondents		
Mean (SD)	25.5±2.9	
Age groups in years		
<24 years	190	41.6
25- 29 years	236	51.6
30- 34 years	23	5.0
>35 years	8	1.8
Gender		
Male	261	57.1
Female	196	42.9
Ethnic group		
Igbo	438	95.8
Others*	19	4.2
Marital status		
Never married	414	90.6
Married	43	9.4
Religion		
Christianity	446	97.8
Others**	11	2.2
Education of father		
No formal education	15	3.3
Primary education	56	12.3
Secondary education	63	13.8
Tertiary education	323	70.7
Education of mother		
No formal education	13	2.8
Primary education	42	9.2
Secondary education	71	15.5
Tertiary education	331	72.4

*Yoruba, minority tribes

** Islam, traditional religion

Table 1 shows the socio-demographic characteristics of the respondents. The mean age of the students was 25.5±2.9 years and majority of the students, 51.6% were in the age group 25-29 years. Majority of the students, 57.1% were males.

Table 2: Career choice of students who prefer to have specialist training

Variable	n= 457 Frequency	Percent (%)
Intention to pursue specialist medical training		
Yes	409	89.5
No	48	10.5
Country of choice for specialist training		
Nigeria	219	47.9
Within Africa	19	4.2
Outside Africa	150	32.8
Undecided	21	4.6
Country of choice for Specialist training outside Africa		
United States of America	66	14.4
Britain	36	7.9
Canada	22	4.8
India	7	1.5
Germany	5	1.1
Undecided	14	3.1
Choice of sector for medical practice after training		
Work in public facility and engage in private practice	161	35.2
Lecture in University	114	24.9
Work in Government ministry/hospital	57	12.5
Non-governmental organization /International agencies	42	9.1
Own/work in private sector	28	6.1
Undecided	7	1.5
Country of choice for medical practice after training		
Nigeria	309	67.6
Within Africa	10	2.2
Outside Africa	60	13.1
Undecided	30	6.6
Country of choice for medical practice outside Africa		
United States of America	26	5.7
Britain	14	3.1
Canada	7	1.5
Undecided	13	1.3

Table 2 shows the career choice of students who prefer to have specialist training. Majority of the students, 89.5% intend to pursue specialist medical training after graduation. The highest proportion of the students, 47.9% preferred to have their postgraduate medical training in Nigeria. More than one third of the students, 35.2% want to work in public health facility and same time engage in private practice. Majority of the students, 67.6% intend to live



and practice in Nigeria after specialist training.

Table 3: Career choice of students who do not want to pursue specialist training

Variable	Frequency (n=457)	Percent (%)
No specialist training; sector of choice for medical practice		
Own/work in private sector	20	4.4
Work in Government ministry /hospital	12	2.2
Non-governmental organization /International agencies	9	2.0
Work in public facility and engage in private practice	4	0.8
Undecided	3	0.7
Country of choice for medical practice		
Nigeria	34	7.4
Outside Africa	9	2.0
Undecided	5	1.1

Table 3 shows the career choice of students who do not want to pursue specialist training. The highest proportion of the students, 4.4% intend to own or work in a private health facility. The highest proportion of the students, 7.4% prefer to live and practice Medicine in Nigeria.

Table 4: Differences in place of medical specialization among the respondents.

Variable	Place for medical specialization (n=409)		χ ² p value	
	Nigeria N (%)	Outside Nigeria N (%)		
Intention to				
Specialize in Surgery	36 (36.7)	62 (63.3)	14.642	<0.001
Specialize in Pediatrics	48 (62.3)	29 (37.7)	2.948	0.086
Specialize in Obstetrics & Gynecology	36 (56.2)	28 (43.8)	0.223	0.637
Specialize in Internal Medicine	28 (62.2)	17 (37.8)	1.530	0.216
Specialize in Community Medicine	19 (67.9)	9 (32.1)	2.475	0.116

Table 4 shows the differences in place of medical specialization among the respondents. A significantly higher proportion of respondents intend to specialize in Surgery outside Nigeria,

(63.3%) when compared with those who intend to do the same in Nigeria, 36.7%, ($\chi^2=14.642, p<0.001$).

DISCUSSION

Majority of the students, 89.5% intend to pursue postgraduate medical training after graduation. This is the trend among medical students in Africa,^{19,20} and other parts of the world.^{21,22} However in a study among dental students in Canada, only a minor proportion of the students, 9% had in mind to go for advanced training including the Residency training programme.²³ Expectedly, this finding was adjudged to be different from that recorded from other parts of North America.²³ The highest proportion of the students, 47.9% intend to pursue postgraduate medical training in Nigeria. Bearing in mind the brain drain in the health sector in Nigeria, this proportion willing to pursue specialist training within Nigerian training institutions is commendable. Perhaps it is this realization that several medical graduates in Nigeria are willing to specialize in the country that necessitated the call for adequate Residency training spaces for these doctors in the various institutions accredited for such trainings.^{9,16}

This call is very relevant since this trend towards medical specialization will persist. Moreover, it has been pointed out that there have been improved remunerations in public tertiary health institutions responsible for these postgraduate medical trainings.²⁴ This was not the case in Nigeria before.

This finding of newly graduated doctors preferring specialist medical training in Nigeria also attests to the development of Medicine and its practice in the country as it is obvious that these students were aware



that their preferred fields of training were available in the country. This growth in the practice of Medicine in Nigeria could be partly attributed to the increased quest for specialization among the country's medical graduates and should be sustained. For example, in a study in Malawi, 44.0% of the students chose trainings that were not available in that country.²⁵ This may have necessitated the call for an increase in postgraduate training opportunities in that country.²⁶ It has been postulated that one of the career related factors favoring retention in Africa is the availability of training opportunities.²⁷

Approximately, a third of the students, 32.8% prefer Residency training outside Africa. Even though this proportion is less than those who intend to specialize in Nigeria, it is still at a cost to the Nigerian health system. This is because similar proportions or even more will continue to exit the shores of Nigeria on annual basis and with the situation at home not improving, majority of them may continue to practice Medicine outside Nigeria. The quest for specialist medical training outside Africa among medical doctors trained in the continent is perhaps not new. In a study involving medical student trained in six sub-Saharan African countries that included Nigeria and South Africa, 40% of the students planned to pursue Residency training outside the shores of Africa.²⁷ Similarly, in a study among medical students in Malawi, 31.5% intended to train outside Africa.²⁵ This preference for specialist medical training in industrialized countries is not limited to medical doctors of African origin. For example, in a study among medical students in Poland, 41% of the students planned to emigrate after graduation.²⁸ This

prompted a call for incentives for future doctors and dentists in Poland so as to avoid the experiences of some developing countries as it related to brain drain.²⁸ In a study in Greece, as high as 70.3% of medical students intended to pursue their specialist training in developed countries.²⁹ And in a study among Resident doctors already in training in Internal Medicine in Pakistan, 82% of the doctors still wanted to proceed abroad for further training.³⁰

The choice of countries for specialist training among doctors from these low and middle income countries were different. From the results of our study, the major countries of choice for specialist training included United States of America, 14.4%; United Kingdom, 7.9% and Canada, 4.8%. This is similar to what was obtained in a survey involving medical doctors who were trained and also practicing in Nigeria.⁸ However, in Cape Verde, the countries preferred by the doctors included Portugal, 53%, United States of America and Brazil 16%, and Cuba 11%,³¹ while from Poland, the main countries of choice included United Kingdom, Sweden, Norway and Spain.²⁸ These differences in countries of preference for the doctors could be based on relationship between the various countries concerned and also it may be a reflection of pattern of previous emigrations.

On choice of sector for medical practice after specialist training, the highest proportion of the students who opted to specialize, 35.2% preferred to work in a public hospital and same time engage in private practice. This finding is close to that found among medical students in University of Cape Verde where majority of the students, 76% preferred to work in the public and private sector at the



same time.³¹ This was attributed to the high remuneration in private practice in that country.³¹ In a study among final year students in eight medical schools in South Africa, a significantly higher proportion of the students intended to work in the private rather than public sector.³² However, in another study in South Africa among medical students of the University of Transkei which has a community based education curriculum, majority of the students, 82.4% preferred to work in public hospitals.³³

Approximately a quarter of the students, 24.9% intended to lecture in a medical school and this is higher than that from other studies.^{22,33} This is a pointer to the future of medical education in Nigeria. It is important to point out that the Fellowship diploma obtained from the Postgraduate Medical Colleges after the successful completion of the Residency training programme is a prerequisite to lecture in any medical school in Nigeria. There is every indication that the number of medical schools in Nigeria will continue to increase. It could be deduced from the results of this study that the human resource requirements of the expected increase in number of medical schools in Nigeria may be adequately taken care of. It is also important to point out that this will only be possible if these doctors are retained in Nigeria after the Residency training programme.

On the whole, majority of the students, 75% intend to settle and practice in Nigeria in the long run. This included 67.6% of the students who intended to pursue postgraduate medical training and 7.4% who were students who did not intend to undergo specialist training. These proportions also

included the students who desired specialist medical training outside the country. This finding is an impressive one bearing in mind the need for more doctors to practice in Nigeria especially in the rural areas. It is important to point out that this scenario may change if the infrastructure at home does not support the expectations of the students after graduation. For example, if the placements for Residency training are insufficient, the tendency for some of the doctors to grudgingly leave the country may be an option and under such circumstances the love for working in the country among that set of doctors may be diminished. It has already been pointed out that increasing the opportunities for postgraduate training is crucial in preventing the emigration of graduate doctors.²⁶ In Nigeria at present, placements for the mandatory one year internship after graduation from medical school, the Residency training and even Consultant positions are faced with difficulties as a result of poor employment opportunities.⁸

When the expectations of doctors are not met, even those who have completed Residency training eventually leave the country to the developed ones either to start a new Residency training or repeat the one already completed in Nigeria. Perhaps that could explain why as much as 82% of doctors already on training for Internal Medicine in Pakistan still planned to go for further training outside that country.³⁰ Thus it is important to understand the expectations of doctors especially the newly graduated ones and take such expectations into account in the planning of health services in the country.



It could be said that the main tendency among medical graduates is to acquire skills. This is because in spite of the proportion of the graduating doctors desiring medical specialization abroad, majority of the doctors planned to live and practice in their home countries. This is typified in this study and also in other studies in South Africa and Pakistan.^{30,33} Also, in a qualitative study involving medical students and newly graduated doctors in Malawi, all the participants preferred to work in Malawi even after specialist training outside the country hence the doctors preferred the acquisition of skills to higher salaries.²⁶ These specialist doctors who were trained abroad were expected to mentor the younger colleagues on their return.²⁶ Also, among students of South African origin, even though 55% of the students planned to work abroad, only 7% wanted a permanent stay outside their native country.³² Suffice it to say that this scenario may not continue to be the same especially in Nigeria. This is because majority of medical doctors are convinced that the government is almost doing nothing in solving the challenges facing medical doctors and the health sector in Nigeria.⁸

A minor proportion of the students 15.1% preferred medical practice outside the African continent and the United States was the major country of choice. There have been projections that the demand for health workers (doctors inclusive) in developed countries will increase because of aging population and the burden of chronic diseases.^{4,5,6} Thus this concept may have continued to influence doctors trained in low and middle income countries to continue to seek medical practice in advanced countries. For example, in a study among medical

students of five sub-Saharan countries, one fifth of the students planned to practice outside the shores of Africa.²⁷ Also, among dental students in a Polish university, 13.6% of the students intend going abroad temporarily or permanently.²²

Unlike the medical students in Poland,²² no student in our study opted for joint venture after graduation rather emphasis was on the acquisition of skills in Nigeria or abroad. It has been observed that patients from Nigeria are presently major recipients of medical tourism.³⁴ and in some of such cases, follow up care were considered inadequate.³⁴ Every year, over a billion dollars is spent on medical tourism by Nigerians⁸ and this amount could have had a multiplier effect on the economy of the country if the money was spent in Nigeria. It has been established that one of the factors influencing the patronage of medical tourism in Lagos, Nigeria is the state of facilities and equipment in public and private hospitals in the area.³⁵ This improvement could be attained through joint ventures by doctors who sought for change in health care delivery in Nigeria and a reduction in the number of people leaving the country every year for medical treatment.

Even though, it remained unclear what the doctors who intend to undergo medical specialization in advanced countries had in mind on their return home, this idea of investing in medical tourism ought to be of concern to them. However, until medical practitioners in Nigeria view medical tourism with interest, it is expected that the private sector should step in and fill in this gap thus reducing the number of Nigerians going outside the country for specialist medical treatment. Already there has been a



call for a strong public-private partnerships as a way of driving increased investment in the healthcare sector in Nigeria. This has been perceived as a good way of improving the remuneration of doctors which is one of the reasons why the medical practitioners seek greener pastures abroad.⁸ Thus initiating and sustaining this approach will serve to retain doctors in Nigeria especially those that have completed the Residency training programme.

A significantly higher proportion of the respondents intend to specialize in Surgery outside Nigeria when compared with those who intend to do the same specialization in Nigeria. There is evidence that the training of surgical residents in Nigeria is fraught with several challenges which include among others poor remuneration and inadequate training facilities.³⁶ Perhaps, this could be the reason why the residents in Surgery prefer to be trained abroad. The Residents could also be motivated to be trained abroad in this specialty since majority of the people who travel abroad for treatment do so for surgical cases. This has necessitated the call to improve the quality of surgical training in Nigeria by improving facilities and the well-being of the Residents in that field.³⁶ This should be applicable to all the medical specialties if the objective is to retain medical doctors in Nigeria.

CONCLUSION

Majority of the students preferred specialist training in Nigeria. Also, majority of the students planned to settle and work in Nigeria after specialist training. There is the need to meet the expectations of these students and this will necessitate increasing the Residency training opportunities in

Nigeria and plans to retain the doctors willing to practice in Nigeria after training. The students should also consider going into joint ventures after graduation and use that as a means of reducing the number of people going out of the country every year for specialist medical treatment.

REFERENCES

1. World Health Organization. Density of physicians (total number per 1000 population, latest ... Available at www.who.int/glo/health_workforce/physicians_density/en. Accessed 30th May 2018.
2. World Health Organization. World Health Report 2006, Working together for health. Geneva. WHO.
3. Scheffler RM, Lui JX, Kinfu Y, Poz MR. Forecasting the global shortage of physicians: an economic -and needs-based approach. *Bulletin of the World Health Organization*. 2008;86:516-523.
4. Cooper RA, Getzen TE, Mckee HJ, Land P. Economic and demographic trends signal an impending physician shortage. *Health Affairs*. 2002;21:140-154.
5. Cooper RA. Weighing the evidence for expanding physician supply. *Annals of Internal Medicine*. 2004;141:705-714.
6. Cooper RA. Physician migration: a challenge for the world. *Journal of Continuing Education in the Health Professions*. 2005;25:8-14.
7. WHO says there are 370 medical doctors in every 10,000 Nigerians... Available at <https://www.pulse.ng/news/local/who-says...medical-doctors-in...nigrians/e3jexke>. Accessed 15th February 2018



8. Ihua B. Emigration of Nigerian Medical Doctors Survey Report. Technical Report 2017.
9. Ossai EN, Uwakwe KA, Anyanwagu UC, Ibiok NC, Azuogu BN, Ekeke N. Specialty preferences among final year medical students in medical schools of southeast Nigeria: need for career guidance. *BMC Medical Education*. 2016;16:259.
10. Anand S, Barnighausen T. Human resources and health outcomes: cross-country econometric study. *Lancet*. 2004;364:1603-1609.
11. Robinson J, Wharrad H. The relationship between attendance at birth and maternal mortality rates: an exploration of United Nations' data sets including the ratios of physicians and nurses to population, GNP per capita and female literacy/ *Health and Nursing Policy Issues*. 2001;34:445-455.
12. Gulliford M. Availability of primary care doctors and population health in England: is there an association? *J Public Health Med*. 2002;24:252-254.
13. Khader Y, Al-Zoubi D, Amarin Z, Alkafregei A, Khasawneh M, Bargar S, et al. Factors affecting medical students in formulating their specialty preference in Jordan. *BMC Med Edu*. 2008;8:32.
14. World Health Organization. Global Health Workforce Alliance. Human for Health Country Profile- Nigeria. 2008. Geneva. WHO.
15. Bentenblog. List of medical schools in Nigeria for studying.... Available at <https://www.bentenblog.com>. General Education News. Accessed 31st May 2018.
16. Rabiou A, Abubakar IS, Ibrahim G, Mu'uta JA. Choice of specialization among female clinical medical students of Bayero University Kano, Nigeria. *Journal of Basic and Clinical Reproductive Sciences*. 2017;6(1):128-133.
17. Federal Republic of Nigeria. Official Gazette, 2007. Lagos, Nigeria.
18. Federal Republic of Nigeria. National Bureau of Statistics. Annual Abstract of Statistics, 2010. Abuja, Nigeria.
19. Akpayak IC, Okonta KE, Ekpe EE. Medical students' preference for choice of clinical specialties: a multicenter survey in Nigeria. *Jos Journal of Medicine*. 2014;8(3):49-52.
20. Rukewe A, Abebe WA, Fatiregun AA, Kgantshango M. Specialty preferences among medical students in Botswana. *BMC Res Notes*. 2017;10:195. doi:10.1186/s13104-017-2523-y.
21. Mendalawi AI. Specialty preferences of Iraqi medical students. *Clin Teach*. 2010;7(3):175-9. doi:10.1111/j.1743-498X.2010.00358.x.
22. Cieszko-Buk M, Bachanek T, Wojcik-Checinska I, Chalas R. Career plans of students of dental-medical major at Medical University of Lublin in the years 2004-2012. *Pol J Public Health*. 2014;124(2):77-80.
23. Nassar U, Fairbanks C, Kilistoff A, Easton R, Flores-Mir C. Career plans of graduates of a Canadian dental school: preliminary report of a 5 year study. *J Can Dent Assoc*. 2016;82:g19.
24. Egbi OG, Unuigbo EI. Choice of medical specialties among final year medical students in two universities in south-south Nigeria. *West Afr J Med*. 2014;33(1):44-50.
25. Mandeville KL, Bartley T, Mipando M. Future career plans of Malawian medical students: a cross-sectional survey. *Human Resources for Health*. 2012;10:29-37.



26. Bailey N, Mandeville KL, Rhodes T, Mipando M, Muula AS. Postgraduate career intentions of medical students and recent graduates in Malawi: a qualitative interview study. *BMC Medical Education*. 2012;12:87. doi:10.1186/1472-6920-12-87.
27. Burch VC, McKinley D, van Wyk J, Kiguli-Walube S, Cameron D, Cilliers FJ, Longombe AO, Mkony C, Okoromah C, Otieno-Nyunya B, Morahan PS. Career intentions of medical students trained in six sub-Saharan African countries. *Education for Health*. 2011;24(3).
28. Josko J, Kasperczyk J, Grzybowski A, Ejsmont J, Karwat D, Zarzeczna-Baran M, Jethon Z. Career plans of Polish medical university students. *Probl Hig Epidemiol*. 2011;92(2):199-203.
29. Avgerinos ED, Msaouel P, Koussidis GA, Keramaris NC, Bessas Z, Gourgoulianis K. Greek medical students' career choices indicate a strong tendency towards specialization and training abroad. *PLoS One*. 2006;79(1):101-106.
30. Patel MJ, Riaz M, Tariq M, Jamil S, Ansari T, Khan MS, Samdani AJ, Ayaz SI, Sorathia A, Akhtar J. Career goals of trainee physicians in Internal Medicine. *Journal of the College of Physicians and Surgeons Pakistan*. 2008;18(6):352-356.
31. Delgado AP, Martins AS, Ferrinho P. Medical trainee experience and expectations regarding future medical practice of medical students at the University of Cape Verde. *Acta Med Port*. 2017;30(10):699-703. <https://doi.org/10.20344/amp.8179>.
32. de Vires E, Irlam J, Couper I, Kornik S. Career plans of final-year medical students in South Africa. *SAMJ*. 2010;100(4):227-228.
33. Dambisya YM. Career intentions of UNITRA Medical students and their perceptions about the future. *Education for Health*. 2003;16(3):286-297.
34. Idowu EO, Adewole OA. Spectrum of neurosurgical complications following medical tourism: challenges of patients without borders. *African Health Sciences*. 2015;15(1):240-245.
35. Omisore EO, Agbabiaka H. Factors influencing patronage of medical tourism in metropolitan Lagos, Nigeria. *International Journal of Scientific & Technology Research*. 2016;5(4):32-41.
36. Ojo EO, Chirdan OO, Ajape AA, Agbo S, Oguntola AS, Adejumo AA, Babayo UD. Post-graduate surgical training in Nigeria: the trainees' perspective. *Niger Med J*. 2014;55(4):342-347.