

Physician Migration at its roots: Emigration Intentions and Preferences among Medical Students of a Nigerian University in the Niger Delta Region

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Abstract

Background

Emigration of physicians from developing countries like Nigeria to industrialized countries has deprived the former of vital human health workforce. With the flight of doctors and the associated brain drain, poor economies and subsequent poor financing of the health sector, the health sector becomes overburdened with myriads of health issues. The study aimed to determine the emigration intentions and preferences of medical students, who are the future physicians.

Method: This cross-sectional study was carried out among fourth - year medical students between August and October 2019. One hundred and thirty nine eligible students were enrolled. A semi-structured questionnaire was used to collect the necessary data. Data was analyzed with SPSS software.

Results: One hundred and three students completed the survey. Seventy respondents (68.0%) reported that they had intention to emigrate outside Nigeria. Only seventy one (68.9%) respondents believed that there were ample career opportunities in Nigeria. The preferred top destination countries were Canada and the United States of America. Lack of professional prospect (61.1% of responses) was the most common 'push factor' while opportunity to gain more experience (69.9%) and better working condition (49.5%) were the major 'pull factors. Emigration intention was negatively predicted by age and 'belief in career opportunities in home country'

Conclusion: Most of the medical students in this study had intentions to emigrate aside their home country after graduation. There is a need for concerted efforts by the government, key stakeholders and individuals to stem the ugly tide of the medical brain drain.

Keywords: Brain drain, Emigration, Medical students, Physicians, Nigeria

Introduction

Physician migration from developing countries, including Nigeria and other countries in sub-Saharan Africa to more developed countries, seems to be on the increase in recent years and has become a major cause for concern.¹ Exodus of skilled workers may be fuelled by 'push factors' such as poor remuneration and motivation, unemployment, poverty, insecurity and unstable politics while on the other hand, massive recruitment and favourable

immigration policies, better employment opportunities and working conditions, higher wages and economic stability in destination countries have been identified as possible 'pull factors'.^{1,2,4}

Although migration of skilled workers usually has positive consequences for destination countries, the resulting 'brain drain' is deleterious to emerging economies.^{5,6}

The Organization for Economic Cooperation and Development (OECD) data set shows high emigration rates across the African continent and emphasizes the reality of the medical brain drain.⁷ A 50% increase in migration trend of Nigerian doctors to the United States of America was reported over the period 2002 – 2011.⁸ The latest World Health Organization report on the density of physician ratio is 4 per 10,000 population in Nigeria,⁹ compared, for instance, with the United States, with a density of 25 per 10,000 population.¹⁰ Nigeria has continuously failed to meet the United Nations' recommended minimum level of health workforce density of 2.5 health workers per 1,000 population.¹¹ This gap is particularly worrisome for a country having some of the worst health outcome indices in the world.¹² The medical brain drain worsens the already depleted healthcare resources in developing countries and widens the gap in health inequities worldwide.¹³

Despite the importance of the medical brain drain to the health care delivery system in Nigeria, not much attention appears to have been paid to it. In order to have a clear understanding of the migration trend among physicians, a survey among medical students will be important. Since medical students are the future medical practitioners, their emigration intention may give a projection of the medical brain drain trend and may give an indication of the medical work force in a country in the near future. A study done in Serbia showed that over 80% of medical undergraduates had considered emigration and practice abroad¹⁴ while in another survey in Ghana, over half of medical students reported an intention of emigration.¹⁵ To the best of the author's knowledge, there appears to be a dearth of report on emigration-related attitude among medical undergraduates in

Nigeria. This study was therefore undertaken to examine the intentions of medical undergraduates towards emigration and to determine their migration preferences and associated factors. The information derived from the study may be helpful while developing specific strategies aimed at curbing the brain drain epidemic in the country.

Materials and Methods

This cross-sectional survey was conducted among fourth-year medical students of the Niger Delta University (NDU) which is located in Amassoma, a community in the Southern Ijaw local government area of Bayelsa State. Although the state has a number of universities, NDU is currently the only one with full accreditation to train medical students.

The study took place between August and October 2019. It was carried out in the clinical students' classrooms at the Niger Delta University Teaching Hospital (NDUTH) at Okolobiri, another community in the state. The hospital serves as a referral centre for many hospitals within and outside Bayelsa state. Clinical students from NDU also receive most of their lectures at this site. The University, like most Nigerian Universities runs a 6-year medical programme comprising an initial 3-year basic medical studies and a subsequent 3-year-clinical programme. The students that were recruited in this study had just started the second phase of their clinical studies.

The inclusion criteria were fourth year medical students of NDU who had just commenced their clinical programme. Students who were absent from class during the study were excluded from the study. All students that met the inclusion criteria were invited to voluntarily

participate in an emigration survey taken in-between mandatory group lecture sessions. Ethical clearance for the study was obtained from the Ethics and Research Committee of NDUTH. The purpose and procedure of the survey was explained to the respondents and appropriate instructions given. Anonymity and confidentiality were maintained. The students were also informed that partaking in the survey was completely voluntary and failure to participate bore no ill consequences. Informed consent was obtained from all those that agreed to participate.

A 29-item self-administered semi-structured questionnaire was used to collect data from the respondents. The items of the questionnaire were adapted from similar studies earlier carried out¹⁶ with slight modification. The information collected included socio-demographic data, age, gender, highest educational degree, marital status, religion, tribe, family setting of parents (monogamous or polygamous), highest educational level of parents, academic performance (whether a respondent had failed a medical course or not) and questions on emigration such as desire to emigrate, the form of emigration, emigration push and pull factors, having relative(s) abroad, preferred destination country, steps already taken in pursuit of emigration, as well as perceived effect of future health care reforms on emigration intention.

Data was collated, stored and analyzed with IBM SPSS version 20.0 (SPSS Inc, Chicago, IL, USA). Data was presented in form of tables and bar charts. Descriptive analysis was computed for quantitative variables. Discrete variables were represented with frequencies and percentages while mean and standard

deviation were computed for continuous variables. The association of various socio-demographic and academic-related factors with intention to emigrate was tested using univariate and multivariate binary logistic regression. The dependent variable was derived from the question "Do you intend migrating outside of the country after graduation?" Those who responded "Yes" were coded '1' while those that responded otherwise were coded '2.' The independent variables were a combination of socio-demographic data and academic-related data. The socio-demographic data included age, gender, marital status (never married *vs.* ever married), ethnicity (Ijaws *vs.* non-Ijaws), religion (Christianity *vs.* other religions) natal family setting (whether monogamous or polygamous), having relative(s) abroad (yes or no), The academic-related variables were 'highest certificate or degree' (senior school certificate or higher degrees), level of education of father and mother (tertiary or not), whether or not respondent had failed a medical course in the past and belief in ample career opportunities in Nigeria (yes *vs.* no). The level of significance was set at the 95% confidence interval.

Results

Out of an eligible population (total class population) of 139, thirty three students were not available, while three students, who started the survey, did not complete it. The total population used for data analysis was therefore a hundred and three. The mean age of the respondents was 22.7 ±4.2 yrs. There were 56(56.4%) males. Ninety seven (94.2%) were 'never married' while only six were 'ever married': Five (4.85%) respondents were still married while one (0.97%) was divorced. Ninety eight (95.1%) respondents were Christians while the remaining 5(4.9%) belonged to 'other Religions.' Eighty one (78.6%) and 22(21.4%) respondents were brought up in a monogamous and polygamous family setting respectively. Forty nine (47.6%) respondents had at least a relative abroad.

The senior school certificate degree was the highest qualification obtained in 76(73.8%) respondents while others had higher certificates: twenty one (20.4%) had advanced level, three (2.9%) had a master degree while another three (2.9%) had a bachelor's degree. Respondents' fathers

had up to a tertiary level of education in 72(69.9%) cases while mothers had up to a tertiary level of education in 64(62.1%) respondents. Thirty two (38.1%) respondents had failed a medical course in the past. The socio-demographic data of respondents is shown in table 1;

Table 1: Socio-demographic data of respondents

Variable	Frequency (%)
Age	
<25	94(91.3%)
>25	9 (8.7%)
Gender	
Male	56(54.4%)
Female	47(45.6%)
Ethnicity	
Ijaws	60(58.3)
Non-Ijaws	43(41.7)
Religion	
Christianity	98(95.1)
Others	5(4.9%)
Marital status	
Single	96 (93.2)
Others	7(6.8)
Certificate or degree attained	
Senior School Certificate	76(73.8)
Higher certificates	27(26.2)
Family setting	
Monogamous	81(78.6)
Polygamous	22(21.4)
Father tertiary education	
Yes	72(69.9)
No	31(30.1)
Mother tertiary education	
Yes	64(62.1)
No	39(37.9)
Relative(s) abroad	
Yes	49(47.6)
No	54(52.4)
Ever failed a medical course	
Yes	32(38.1)
No	71(68.9)

Ninety five (92.2%) respondents had intention of practising as a doctor somewhere after graduation, two (2.0%) did not wish to practise while 6 (5.8%) were undecided as to whether they would practise as a doctor or not. Seventy two (69.9%) participants wished to own a private clinical practice in the future.

Seventy respondents (68.0%) reported that they had an intention to emigrate outside their home country while 23(22.3%) respondents were not sure if they would emigrate in the future. Only 10(9.7%) respondents had no intention of migration. The likelihood of emigrating outside Nigeria was rated as 'greater than 50%' in 63 (61.2%) respondents. Eleven (10.7%) of them were 100% certain that they would emigrate after school while the emigration intention of the others was to lesser degrees. Twenty seven (26.2%) respondents reported a preference for permanent emigration, 48(46.6%) were interested in staying away for some years only, while 22(21.4%) would opt for a very

short stay. Twenty three (21.4%) respondents indicated that they would emigrate within one year after graduation, thirty seven (35.9%) of them between one and five years after graduation while twenty four (23.3%) would emigrate after five years post-graduation. Seventeen (16.5%) respondents who reported uncertainty about the chance of emigration however stated that they could consider a very short stay abroad in the future, while retaining position in Nigeria. Sixty nine (67.0%) of the respondents wanted to seek for employment abroad after graduation though seventy one (68.9%) respondents believed that there were ample career opportunities in Nigeria.

The most common emigration 'push factor' reported was perception of poor professional development in Nigeria (in 63; 61.1% responses) while opportunity to gain more experience (72; 69.9% responses) and better working condition (51; 49.5% responses) were the major 'pull factors' for emigration among the respondents. (fig 1).

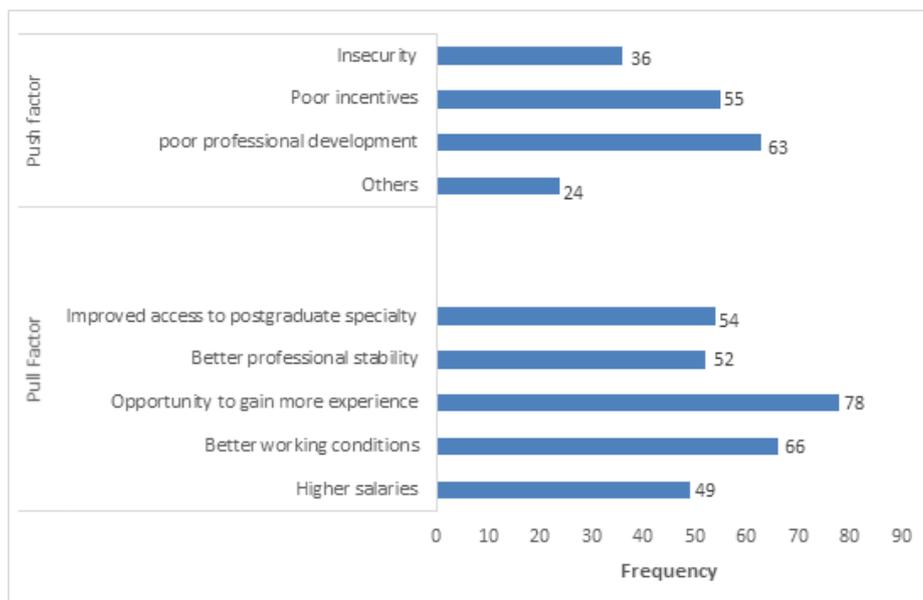


Fig 1: Push and Pull factors influencing emigration among the medical undergraduates.

The preferred top destination countries were Canada in 34(33.0%) respondents and the United States of America in 24(23.3%) respondents (fig 2)

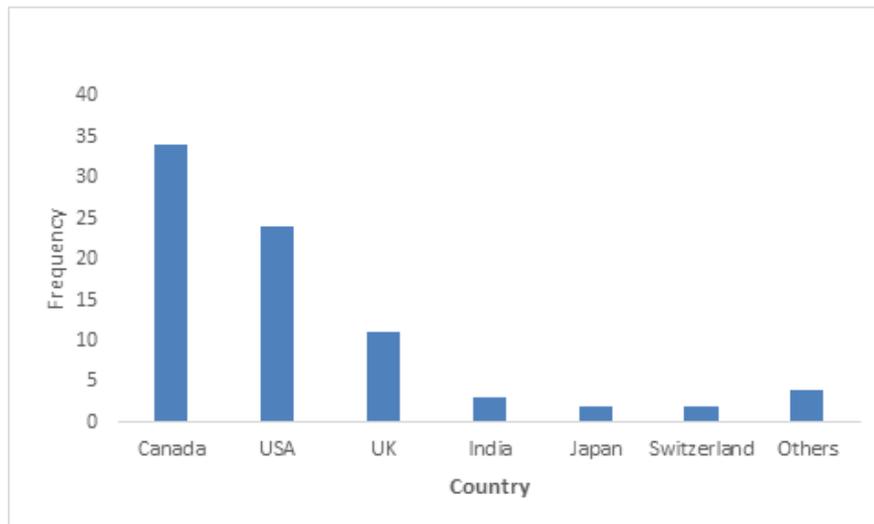


Fig 2: Preferred destination countries among the medical undergraduates

Out of the socio-demographic and academic - related factors tested in the logistic regression model, only 'age' and 'belief in career opportunities in home country' had association with 'intention to emigrate' (table 2) and remained significant in multivariate analysis (table 3). Respondents who were less than 25 years old had a ten times increased odd of emigration compared with those that were

older. Similarly, respondents who did not believe that there were ample career opportunities in Nigeria had sixteen times increased odd of emigration compared with their counterparts who believed in the existence of such opportunities (table 3). The other factors did not show any significant association with 'intention to emigrate' (table 3)

Table 2: A univariate logistic regression analysis of factors associated with willingness to emigrate

Variable	B	P	OR(CI)
Age			
>25	1.602	0.031*	4.963(1.159 – 21.2888)*
<25			1
Sex	-0.010	0.980	
Female			0.990(0.431 – 2.272)
Male			1
Marital status	0.501	0.529	
Never married			1.650(0.347 – 7.836)
Ever married			1
Ethnicity	-0.330	0.448	
Non-Ijaw			0.719(0.307 – 1.685)
Ijaw			1
Religion	-0.662	0.561	
Christianity			0.516(0.055 – 4.803)
Other religion			1
Certificate	-0.080	0.867	
Senior school			0.923(0.362 – 2.351)

Variable	B	P	OR(CI)
certificate			
Higher degrees			1
Ever failed at least a medical course	-0.053	0.908	
Yes			0.949(0.387 – 2.328)
No			1
Family setting	-0.013	0.980	
Polygamous			0.987(0.359 – 2.714)
Monogamous			1
Father education	-0.201	0.668	
Below tertiary			0.816(0.327 – 2.048)
Tertiary			1
Mother education	0.468	0.277	
Below tertiary			1.597(0.686 – 3.716)
Tertiary			1
Relative(s)abroad	-0.674	0.120	
Yes			0.510(0.218 – 1.193)
No			1
Belief in ample career opportunities in Nigeria	-2.453	0.001*	
No			11.625(2.578 -52.425)
Yes			1

B= standardized coefficient, OR – odds ratio, p = level of significance, CI – confidence interval, * statistically significant

Sixty three (61.1%) respondents had taken at least a step in pursuit of their emigration goals. The steps taken included browsing the internet in 44(42.7) and establishing contacts with other emigrants in 40 (38.8%) cases. Forty eight (46.6%) respondents reported that health care reforms in Nigeria could influence their emigration decision in the future while 18(17.5%) did not think so. However, 30 (29.1%) respondents were not sure whether their decision could be affected by such reforms. Seven (0.07%) respondents left the question unanswered.

Discussion

This study has revealed a high desire of medical students to emigrate after graduation. Almost 70% of them had an

intention to emigrate from Nigeria. Although, only about a quarter were considering permanent emigration, this does not bring much relief as favourable factors encountered abroad may encourage migrants to stay for longer than earlier anticipated.¹⁷ For instance, a study done among some UK-trained physicians in New Zealand showed that even though only 30% of participants had planned to emigrate 69% of them extended their stay on getting there.¹⁸ Over one-fifth of participants were unsure about their wish to emigrate. Attention must also be paid to this subset of the population as the undecided today may become emigrants tomorrow depending on the conditions they encounter in the future.

Considering these findings, it is likely that the present trend in brain drain among medical doctors may yet continue or even intensify in the near future especially if their colleagues in other institutions in the country share a similar disposition.

The study found a higher percentage of medical students with intention to migrate compared with a study in Ghana (49%).¹⁵

This rate is also much higher than the average reported rate of 21% found in another study comprising students trained in six African countries, namely South Africa, Democratic Republic of Congo, Kenya, Tanzania, Uganda as well as Nigeria.¹⁹ However, these studies including the latter one, were done several years ago. Considering the dynamic nature of migration issues, it is possible that there may have been an actual increase in emigration interest over this period.

Majority of the students who had migration intentions had already taken some steps such as internet browsing for opportunities and contacting friends abroad for enquiries. This implies some level of seriousness about their intentions. A similar emigration survey done in Pakistan and Romania showed that a considerable number of medical students had taken concrete steps including studying for licensing examinations, enrolment in a language course, searching for jobs on the internet and planning to gain clinical experience in their desired country of interest while still in their home country.^{20,21}

While the decision to migrate may be a personal one, the overall context should be considered as well. The most common push factors for migration in this population were perception of poor professional development and poor incentives in home country. Similarly, factors related to professional development were observed to play a leading role among a group of Egyptian Physicians migrating

to Germany.²² Financial incentives have been shown to be an important motivating factor for health workers, especially in countries where government salaries and wages are insufficient to meet the basic needs of health workers and their families.²³ These incentives include salary supplements, benefits and allowances. Improved salaries and benefits are major financial incentives for workers to remain in the health sector and in their home communities.²⁴

A major pull factor in this study was the opportunity provided by migration to gain more professional experience. It has been reported that an important factor attracting health professionals to countries overseas is the opportunity to gain international experience. This is especially important in a country like Nigeria with low budgetary allocation to health²⁵ and decaying health infrastructure. It is therefore not surprising that most of these students desired to move out for professional exposure and experience.

The preferred destination countries in this study were Canada, SA and UK. Canada is presently a popular destination for several developing countries. This may be due to favourable immigration policies and massive recruitment of skilled workers in recent times. In a study done in Saudi Arabia among physicians, Canada, followed by USA were also the preferred countries for immigration.²⁶

The determinants of 'intention to emigrate outside Nigeria' in this study were age and 'belief in ample career opportunities in Nigeria' Among Physicians in Canada and Iceland, younger age was similarly associated with willingness to emigrate^{27,28} while in a German study, older doctors were more likely to emigrate compared with younger ones.²⁹

However, in these studies, most of those who wished to emigrate were in the mid- or late thirties. Our population however, was a younger one as the study was carried out among medical students and not already working doctors. Working conditions, including career opportunities have severally been recognized as having major effects on a country's emigration rate. Preventive measures of emigration should therefore address modifiable determinants associated with an increased chance for wishing to emigrate, including availability of career and job opportunities.

Sex showed no association with willingness to emigrate. In the German study, 'female sex', 'being in a relationship' and 'having children' were associated with a lower chance of wishing to emigrate.²⁹ This may be presumably due to the added responsibility or demand conferred by such position or status. In our study, almost all participants were single. 'Having a relative living abroad' did not show any significant association with willingness to emigrate in this study. This is contrary to the findings of a study done among Lebanese medical students which reported that having a relative or friend abroad conferred a significantly increased odd for intention to train abroad.³⁰ However, our study was not necessarily about training abroad. Similarly, 'having failed a medical course' showed no relationship with willingness to emigrate. Those that had failed at least a medical course were not more or less likely to emigrate compared with their counterparts who have had no such academic problems. Our finding is similar to the report of Kolčić et al who found no significant difference in willingness to emigrate between Croatian final year medical students that have 'ever failed a year' and 'those that never failed a year'.³¹ Similarly, there were no significant differences in academic grades between those contemplating migration and those planning to remain in Poland.¹⁶ It does appear that the desire of medical students to emigrate outside their home country

may have no relationship with their academic performance. Similarly, parental education had no significant relationship with emigration intentions. Furthermore, family structure, whether monogamous or polygamous, had no impact on desire to emigrate. There are however not many studies on these associations to allow for adequate comparisons.

It is therefore obvious from this study that the medical brain drain may continue except some proactive steps are taken to curtail it. The government and health care stakeholders should tackle this issue as a dire emergency. Active steps should be made to create more jobs and improve the career prospect of doctors. There should be more room for professional training and re-training of doctors to improve professional perspectives. Medical students and resident doctors should have short exchange programmes and elective periods overseas where they can have additional clinical exposures and experience without necessarily a need for long term emigration. Deliberate attempts should be made to improve incentives and working conditions of doctors and to breach the current wage gap among countries. Generally, there should be an urgent and upward review of the budgetary allocation to health. It is worrisome to note that only 3.6% of the annual budget of N8.8 trillion was allocated to health services in 2019 despite the fact that Nigeria currently has one of the poorest health records in the world.²⁵

In conclusion, most of the medical students in this study had a desire to emigrate outside Nigeria. Significant push factors were lack of professional perspectives and poor incentives in the country while pull factors in this population were 'opportunity to get more experience and better working conditions.

'Intention to emigrate was negatively predicted by age and perception of career opportunities in Nigeria. There is a need for concerted efforts by the government, key stakeholders and individuals to stem this ugly tide by addressing these factors.

The study had some limitations. The sample size was rather small and study was limited to only one class of students in a particular institution. Secondly, its cross-sectional design does not allow for cause-and-effect analysis. Also, students who were absent from class did not partake in the study. One cannot exclude some elements of response bias in this study. There may be need for follow up studies to observe for possible changes in attitude with subsequent progress in medical school. More studies are needed on a larger scale among medical students and physicians to explore the current trend and other determinants of the medical brain drain as well as uncover unfavorable policies likely to perpetuate this epidemic.

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