PUBLICATION PRACTICE AND SPECIALTY PREFERENCE AMONG FOREIGN TRAINED MEDICAL GRADUATES IN NIGERIA

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ABSTRACT

Background: **An understanding of the training background, publication, and research skills are essential for designing targeted preparatory, and policy interventions. Hence, we assessed the publication practice and specialty preference of foreign medical graduate (FMGs) who have attempted the examination before without being successful and those planning to take the MDCN examination for the first time.**

Subjects and Methods: **A cross-sectional self-administered questionnaire-based study was conducted among 125 FMGs preparing for the MDCN licensing examination. Data on publication practice and specialty preference were presented using descriptive and bivariate statistics. The data were analysed using the statistical software IBM SPSS (version 25). The significance level was set at $P < 0.05$.**

Results: **Of the 125 FMGs respondents, the median age was 27 (22 - 40) years. Two-third (66%) of the study participants did not have any exposure to research during training while 105 (84%) FMGs have never published any article. There was a significant difference between the level of research exposure these FMGs had and the country of undergraduate training ($\chi^2=30.76$; $p<0.001$). Thirty of the participants (24%) chose obstetrics and gynaecology as specialty of interest after internship, while 23 (18%) of the respondents were undecided.**

Conclusion: **Publication practice is low among these cohorts of FMGs studied as most participants reported no formal exposure to research during undergraduate medical training. Majority of the participants chose one specialty or the other as area of specialization after internship, while 18% of the respondents were undecided.**

Keywords: Foreign medical graduates, Examination, Medical education, Nigeria.

INTRODUCTION

Foreign Medical Graduates just like many countries in the world have licenced medical doctors who were trained in other countries coming back to practice in their native country, and Nigeria is not an exempt to this occupational mobility.[1] This occupational mobility is essential in some countries, because there may be fewer medical schools, while for others, the demand for doctors far outstrips the number of doctors that can be trained within the country. In the United States of America (U.S.A) for example, these FMGs are referred to as International Medical Graduates (IMG), [2] and U.S.A has strict policies regarding medical licensing similar to the Medical and Dental Council of Nigeria (MDCN) licensing examination, which is a prerequisite for practise in the respective countries.

A doctor is only allowed to practice in the U.S.A once he or she has obtained a license in the state in which he

intends to work. The person must pass the first two steps of the United States Medical Licensing Examination (USMLE), become certified by the Education Commission for Foreign Medical Graduates, get into an accredited U.S. or Canadian residency program, and finally, go back and pass step three of the USMLE. Each of these steps could take multiple years, repelling doctors who are already able to practice in the country in which they were trained. [3] The practice is similar in Europe, Australia, and the United Kingdom, to mention a few.

In Ghana, West Africa, a foreign medical graduate (FMG) must satisfy the Ghana Medical and Dental Council (GMDC) that he or she has acquired the basic knowledge, skills and competencies of practitioners by passing the Council's registration examinations. Section 20 (3) of the National Redemption Council Decree (NRCD) 91 (1972) enjoins the GMDC 'to direct any person to undergo such examinations as it deems necessary before registration.' Many FMGs find it difficult to gain registration in the host country due to having to fulfil various long, costly and complex regulatory requirements. [4]

In Ghana, a combination of the factors enumerated above have encouraged and strengthen the pull factors for FMGs into the country. In addition, intake into medical schools in Ghana has become so competitive that several prospective applicants, who qualify by the criteria set by universities, are unable to secure admission because of large numbers of applicants for relatively fewer training positions available. This compels unsuccessful applicants to also seek training outside Ghana which is a push factor.

The situation in Nigeria has evolved over time. In the past, the Medical and Dental Council of Nigeria usually conducts remedial lessons for 3 to 6 months to prepare candidates for the registration examination for foreign trained doctors,[5] in recent times, which has been abolished due to growing concern of the cost of such training in the hospital of attachment. This and other factors to a certain degree would have accounted for the poor performance reported in these examinations. Another factor is the variation in curriculum, disease epidemiology, and clinical exposure across different training institution in the world.[6,7]

As reported by Obaje *et al.*,[8] 145 (54.9%) of the medical students studied have an average level of research knowledge and 56 (21.2%) showed poor research knowledge. They however noted the barriers to research engagement to include lack of mentoring, time constraints, insufficient motivation or reward, and lack of funding.[8]

The preference and choice of specialties among early career doctors vary from country to country and between genders. A study in Nigeria have shown that final-year medical students tend to specialize majorly in the four core specialties of Obstetrics and Gynaecology, Surgery, Paediatrics, and Internal Medicine.[9] These early career decisions may influence the need for post graduate training and research publication.

There is paucity of data on the socio-demographic characteristics of FMGs sitting for the MDCN examination, in addition to the data on countries, institutions of training, publication practice, and specialty interest among these graduates. The aim of this study is to determine the publication practice and specialty preference among FMGs. This information will be useful first to the MDCN in monitoring of training of these graduates in foreign countries, interrogate their performance in the MDCN registration examinations, and explore factors associated with their performance in the examination.

SUBJECTS AND METHODS

This was a descriptive cross-sectional face validated self-administered pre-tested closed-ended questionnaire-based study conducted and distributed via online google document platform in 2024.

The questionnaire assessed socio-demographics, country of training, reason for the choice of medical training institution, year of graduation, research exposure experience, publication practice, and choice of specialty after internship.

Cohorts of foreign medical graduates who are either sitting for the examination for the first time or preparing for a re-sit of the MDCN licensing examination, were offered a free three months remedial class organised by Medics Hub Academy, a non-governmental organization. This was done at a time remedial classes were no longer being offered to FMGs by MDCN. At the end of the revision course, those who gave consent of participation in the study after observing the participants information sheet were surveyed. The Medical and Dental Council of Nigeria is a regulatory body responsible for the registration and regulation of the practice of all doctors and dentist in the country. Ethical approval was sought from the University of Ibadan/ University College Hospital joint ethical review committee with approval number: UI/EC/24/0032. The study was conducted in accordance with the ethical principles outlined in the World Medical Association Declaration of Helsinki.[10]

Sample Size determination

Sample size determination for a cross-sectional study

$$n = \frac{(z_\alpha)^2 \times p \times q}{d^2}$$

n = desired sample size

Z_{α} = the standard normal deviate (Z-score) corresponding to the chosen confidence level.

At 95%, Z_{α} = 0.05 and this equals 1.96

p = the proportion of students who failed the licensing exams in Ghana[1] = 58.5% (0.585)

q = variability of proportion of the outcome variable = 100 – 58.5 = 41.5% (0.415)

d = margin of error desired was set at 0.05.

$$n = \frac{(1.96)^2 \times 0.585 \times 0.415}{0.05^2}$$

$$n = \frac{3.8146 \times 0.585 \times 0.415}{0.0025}$$

$$n = 373.05 = 373$$

Adding 10% for non-respondents = 373/0.9 = 415 students. A design effect of 1.5 was applied to bring the sample size to 623 students.

Since the total number of students is less than 10,000 the correction formula was applied

NF= $\frac{n}{1+\frac{n}{N}}$

Where NF is corrected sample size, n is the estimated sample size, and N is the size of population from which sample is to be selected. Therefore, NF= $\frac{623}{1+\frac{623}{155}}$ =124.1 is approximately 125 students.

Sampling technique

Convenience non-probability sampling technique was employed.

The PECO framework of this quantitative, observational research question on was there a difference between the levels of research exposure, publication practice these FMGs had and the country of undergraduate training were explored.

P (Population/ Subject): The 125 selected FMGs.

E (Exposure): The MDCN licencing examination.

C (Comparison): Cohorts of foreign medical graduates who are either sitting for the examination for the first time or preparing for a re-sit of the MDCN licensing examination.

O (Outcome): This will be useful first to the MDCN in monitoring of training of these graduates in foreign countries, interrogate their performance in the MDCN registration examinations, and explore factors associated with their performance in the examination.

Data on sociodemographic characteristics, undergraduate medical education, research exposure, publication practice, and specialty preference were presented using both descriptive statistics and bivariate test statistics such as Fisher's exact test on the association between the level of research exposure FMGs had and the country of undergraduate training. The data were analysed using the statistical software IBM SPSS (version 25). The significance level was set at $P < 0.05$.

RESULTS

A total of 125 FMGs participated in the study. The respondents had a median age of 27 (22- 40) years. The state of origin of the FMGs cut across 31 states excluding; Cross Rivers, Bayelsa, Enugu, Kebbi, Taraba, and federal capital territory - Abuja. Fifteen (12%) FMGs were from Kano and ten (8%) from Kaduna respectively.

Thirty-six (28.8%) of the graduates trained in China, followed by Sudan 26 (20.8%), and Ukraine 23 (18.4%) (Figure 1).

Fifty-four (43%) of these FMGs did not give any external reasons for the choice of the medical schools they attended, other than personal convictions and

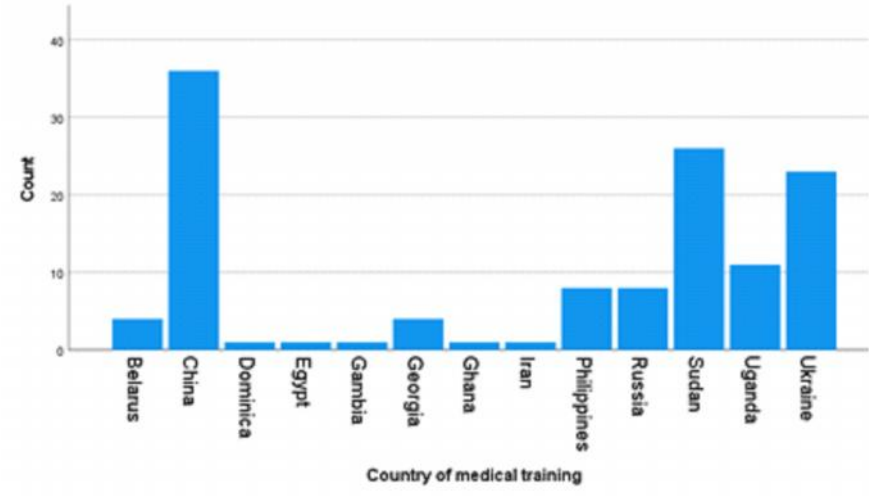


Figure 1: Proportion of students and country of medical training

choice. Among those who responded, four (3.2%) participants stated that familiarity with someone in the country and lower tuition costs influenced their choice. Twenty-nine of the participant (23%) gave reasons for opting foreign medical training as parents' choice, while thirty (24%) stated that it was to avoid prolonged stay in school due to frequent industrial actions in Nigerian universities.

The modal duration of years spent in medical school was six years by 76 FMGs, and 117 (94%) of the study participants did not experience industrial action halting academic programmes.

Fifty-three (42%) of the respondents have not had any prior remedial session or class in preparation for the MDCN examination. Of those who attended the preparatory classes, the modal duration of attendance was six months. Forty-eight participants (38%) perceived previous examinations as fair, while 36 (29%) considered them poor (Table 1). Majority 110 (88%)

Table 1: Perception of the general outcome of previous MDCN licencing examinations among respondents?

Perception of outcome of examination	Frequency	Percent (%)
Excellent	2	1.6
Fair	48	38.4
Good	23	18.4
Poor	37	29.6
Very Poor	15	12.0
Total	125	100.0

of the FMGs sitting for the September 2024 MDCN examination had graduated one to eight years earlier (Table 2).

Table: 2: Year of graduation

Year of Graduation	Frequency	Percent (%)
2016	1	0.8
2017	1	0.8
2018	2	1.6
2019	2	1.6
2020	12	9.6
2021	18	14.4
2022	33	26.4
2023	41	32.8
2024	15	12.0
Total	125	100.0

Two-third (66%) of the study participants did not have any formal exposure to research during undergraduate training, however there was a significant difference between the level of research exposure FMGs had and the country of undergraduate training ($\chi^2 = 30.76$; $p < 0.001$). (Table 3). One hundred and six participants (84.8%) had never published any article, while among FMGs that have published, the modal number of publication was eleven participants publishing two articles each. One participant published one article, two participants had published four articles each, one participant had published seven, while two had published ten articles each (Table 4).

Table 3: Research exposure during medical training

Exposure domain	Responses	Frequency (n)	Percentage (%)
Research exposure	Yes	43	34.4
	No	82	65.6
Total		125	100

The level of research exposure FMGs had and the country of training ($\chi^2 = 30.76$; $p<0.001$).

Table 4: Number of articles published either as a sole author or co-author.

Number of publications	Frequency (n)	Percent (%)
None	106	84.8
1	1	0.8
2	11	8.8
3	1	0.8
4	2	1.6
6	1	0.8
7	1	0.8
10	2	1.6
Total	125	100.0

Forty seven (38%) of the study participants hope to get further training abroad after their internship. Thirty of the participants (24%) chose obstetrics and gynaecology as specialty of interest after internship, while 23 (18%) of the respondents were undecided.

DISCUSSION

There is a geo-spatial distribution of FMGs preparing for the MDCN licensing examination, with most of the respondents being from the Northern part of the country. This finding could be compensatory, because the Northern part of Nigeria has been reported to have a lower number of registered doctors in the MDCN database when compared with the southern part of the country.[12] Foreign medical students from the Northern part of Nigeria are often sponsored by some of their State Government in a bid to forestall the apparent paucity of medical doctors.[13-15]

With the current doctor patient ratio at 1:10,000 (compared to 1:5,000 recommended by the Commonwealth, and 1:600 recommended by the World Health Organization), Nigeria is yet to achieve this WHO recommended ratio.[16] Considering the rate

at which doctors are being trained locally and externally, significant improvements in this ratio continue to be more of a dream than a reality because of emigration after internship or during residency. The consequence of this brain drain is the reduction of practicing doctors from 66,241 in 2024 to 55,000 in 2025.[17] In addition, becoming a medical doctor is a venture which is attractive to young senior high school science graduates leading to intense competition for the few slots available in this populous black nation. Many graduates with excellent results either do not acquire slots for medicine and surgery in the universities in Nigeria or cannot afford the 'fee paying' rates offered by the private institutions as observed before the free rise of dollar against the naira. They thus opt for medical training in countries outside Nigeria with subsequent increase in the numbers of FMGs returning to sit for the council examination annually.

A great number of FMGs, their parents, the legislature have brought allegations against the MDCN, stating that their work is shrouded in secrecy and there is a belief that either there is a hidden agenda to fail these medical graduates, extort exorbitant examination and remediation fee, prevent doctors from certain countries from practicing, or there is a quota system on number of doctors who should pass each year.[18]

The MDCN, therefore, has to cope with increasing numbers of prospective applicants, the challenges of maintaining standards and the continuous badgering from failed candidates, their parents and some sections of the media, and government that the examinations are deliberately designed to prevent foreign trained doctors from practicing in Nigeria.

Low research exposure was noted in this survey, and this may further affect their practice of evidence-based medicine and postgraduate academic development. These findings support the need for structured preparatory programmes tailored to local clinical realities of which the MDCN,[19] and some non-governmental academies have been involved in organizing remediation programmes.

Research is the bedrock of evidence-based clinical science, and it is essential for a medical practitioner to be well-versed in research for clinical guidance and approach to effective diagnosis, investigations, and management of diseases. It is for this reason that most tertiary medical colleges and hospitals incorporated research into the curriculum of the undergraduate training.

A study done by Adebayo *et al.*[20] on very early career doctors revealed that they had a high research participation, but low research presentation in scholastic gathering, funding, authorship, and publication rate. The low publication rate does not come as a surprise as the participation of this very early career doctors only contribute to an almost negligible, technical part of the research out of necessity or imposition by older colleagues in the profession, rather than out of a curious, passion-driven 'thirst for knowledge' mind set.

The medical student is usually not at fault for this but seems to be discouraged by the circumstances surrounding medical school such as poor school-life balance, bullying by seniors, and poor organizational support among many other factors.[21]

Research is an aspect of the medical practice that an average doctor pays little attention to. There haven't been studies conducted to determine the attitude and behaviours of FMGs with regards to research while undergoing the medical training. Studies available to ascertain the motivation, experience and attitude of publishing was conducted on medical students in the UK in 2011 and it was concluded that career progression was the main motivation in students who had positive attitude towards publishing.[22]

After completing the rigorous and mandatory houseman ship training, doctors who intend to further specialize, do so by enrolling into a residency training program in any of the surgical or non-surgical specialties. This decision is likely to be influenced by a myriad of factors as the Doctor undergoes the medical internship training.[23] A study reported the common factors influencing an early career doctor's choices to go for a surgical or non-surgical specialty is mostly interest, and gender.[24] Other factors were mentioned, but the reasons for certain choices were not explored. There's a possibility that the available studies are limiting because both the Nigerian trained and FMGs posted to different training centres during medical internship don't work in all the specialties which would limit their exposure and in turn, their interest and affect their choices.

Given the significant disparity in the doctor-to-population ratio in Nigeria, it is essential to ensure an equitable distribution of medical professionals across the nation to enhance the delivery of optimal care.[25] The preference and choice of specialties among early career doctors vary from country to country and between genders.[26,27] However, multiple studies in Nigeria have shown that final-year medical students tend to specialize in the four core specialties: Obstetrics and Gynaecology, Surgery, Paediatrics, and Internal Medicine.[9,29,30] In 2015, a similar study was conducted

among house officers in Nigeria, and it revealed a significant preference among them for specializing in Obstetrics and Gynaecology and Surgery.[24] This is similar to our observation in this study.

With a high proportion of final-year medical students expressing a desire to pursue postgraduate specialty training, and the lack of similar data among FMGs in Nigeria, are some of our findings with similar reportage by Ezegwui *et al.*[29]

Implication for public health and practice

Limited research experience among future doctors may reduce the embracing of evidence-based practices, potentially affecting the quality, effectiveness and efficiency of healthcare delivery. Building research competencies early can improve patient outcomes and strengthen health systems through informed clinical and policy decisions. The fact that the majority had already chosen a specialty after internship provides useful information for workforce planning. Understanding specialty preferences can help policymakers anticipate future shortages or surpluses in different specialties and develop incentives that align workforce distribution with health priorities of the nation, particularly in underserved specialties such as family medicine, public health, psychiatry, and rural healthcare. In addition, more needs to be done in institutionalising good research publication practice among medical students.

Limitations

The small sample size, selection bias as only those who consented participated, non-response bias, the convenience sampling method used in this survey, and also because of the cross-sectional design, the study cannot establish causality.

CONCLUSIONS

FMGs preparing for the MDCN licensing examination have heterogeneous training and geographical backgrounds. Most participants reported no formal exposure to research during undergraduate medical training.

Publication practice is low among these cohorts of FMGs studied as most participants reported no formal exposure to research during undergraduate medical training, and one-fourth of participants chose obstetrics and gynaecology as specialty of interest after internship.

We recommend that structured learning and preparatory programmes should be organized to enhance preparedness for medical practice in Nigeria. The 18% of respondents who remained unsure about specialization indicate a need for structured career counselling and mentorship during internship and licensing preparation.

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