Specialty choices amongst graduating medical students in University of Calabar, Nigeria: Implications for anaesthesia practice

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Abstract

Background: Despite its strategic role in health care delivery, anaesthesia does not attract medical manpower in developing countries more so amongst medical trainees. This has resulted in an alarming lack of physician anaesthetists. This study aims to determine the rate of selection of anaesthesia as a specialty choice and factors that influence medical students when choosing specialties.

Methods: A cross-sectional study was conducted amongst final year medical students in University of Calabar. A semi-structured self-administered questionnaire was distributed to a total of 105 final year students who had undergone their posting in anaesthesia..

Results: The mean age of respondents was 27± 4 years. Seventy-two (69%) were males. Ninety-six (91%) of the students indicated interest in specializing. Thirty-four (32%) preferred obstetrics and gynaecology, 20 (19%) wanted paediatrics and 13 (12%) preferred family medicine while 3 (3%) wanted anaesthesia. Factors which influenced choice of specialty amongst the graduating students included: personal interests 85 (81%), future job opportunities 66 (63%) and requirement of specialized skill 65 (62%). Forty-six respondents (44%) reported that their anaesthesia posting experience was interesting, 27 (28%) as very educative. The duration of the posting was rated very short by 25 (24%).

Conclusion: With less than 5% of graduating medical students indicating interest in anaesthesia specialization, improvement of training facilities and provision of incentives to intending trainees are strongly recommended.

Keywords: Specialty choices, anaesthesia, medical students

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Introduction

Anaesthetists are multi-skilled physicians who, in addition to ensuring patient safety and stability prior to, during and after surgery, participate in a vast array of hospital activities ranging from the alleviation of acute and chronic pain, running intensive care units, gaining specialized intravenous access and emergency management of life threatening events. Despite its strategic role in health care delivery, anaesthesia has failed to attract medical manpower in most developing countries resulting in an alarming lack of physician anaesthetists.[1,2,3]This may be so because most newly qualified doctors do not consider a career in anaesthesia when embarking on residency training.[4,5,6,7] This is even more troubling when one realizes that medical students are exposed to a wide range of medical sub-specialties including anaesthesia, in the course of their medical education. Therefore, the number of trained anaesthetists does not seem to be commensurate with the increasing numbers of other surgical specialists. Quite often, newly qualified doctors are forced to pursue a career in anaesthesia because their initial specialty choices are oversaturated[9].

Although the domain of anaesthesia has now extended far beyond the exclusive ambit of the operating theatre, the extent to which this is appreciated by medical students remains unknown. Previous studies have recommended more time to be made for anaesthesia posting in the curriculum so as to increase student contact time with anaesthesia and thus increase its attractiveness.[4,5,6] This has been done in most universities, yet anaesthesia has remained unpopular as a career choice among graduating medical students.[2,4,6-8] Since the future work force of our health care system is influenced by choices these students make, this study was conducted to determine the rate of selection of anaesthesia as a specialty choice among final year medical students and the factors that may influence these medical students when choosing a career.

Method and Materials

Setting

This study was conducted among final year medical students of the College of Medicine, University of Calabar, Cross River State, Nigeria.

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Study Design

A semi-structured self-administered questionnaire was distributed to a total of 105 students in the final year class who had undergone their undergraduate training in anaesthesia. The class representative distributed the questionnaires immediately after a lecture after consent had been sought, and at completion, submitted them to members of the research team. The response rate was 100%. The questionnaire employed elicited information on socio-demographic characteristics, decisions about specialization, and possible factors which affected choice of specialty. The factors selected were obtained from literature review and prior discussions held with medical students. Demographic characteristics included age, sex, marital status and religion. Decision regarding specialization and three specialties they would most likely consider after graduation ranking them in order of priority. Specialty options included Anaesthesia, Community Medicine, Family Medicine, Internal Medicine, Obstetrics and Gynaecology, Paediatrics, Laboratory Medicine, Radiology, Otolaryngology, Ophthalmology, Psychiatry and Surgery. Factors indicated in the questionnaire as influencing choice of specialty were categorised into experiences during undergraduate training, personal factors and speciality related factors. Provision was also made for other factors not included in the questionnaire. Questions regarding perception of anaesthesia as a specialty were also elicited from the respondents.

Data Analysis

Following data collection, questionnaires were manually sorted out, coded before entry and cleaned following entry into the computer for statistical analysis using SPSS version 19.0. Data analysis was done using descriptive statistics (Frequency, proportions, means and standard deviation) to summarize variables. The level of significance was set at 5%.

Ethical considerations

The study procedures and data collection instruments were reviewed and approved by The Health Research Ethical Committee of the University of Calabar Teaching Hospital and strict confidentiality was maintained as responses were anonymized.

Results

One hundred and five completed forms were returned. The mean age of respondents was 27±4 years. Seventy two (69%) were males and 90 (86%) were single. Ninety nine (94%) were Christians while 6 (6%) were Moslems. Ninety six (91.4%) of the students indicated interest in specializing following completion of the undergraduate training.

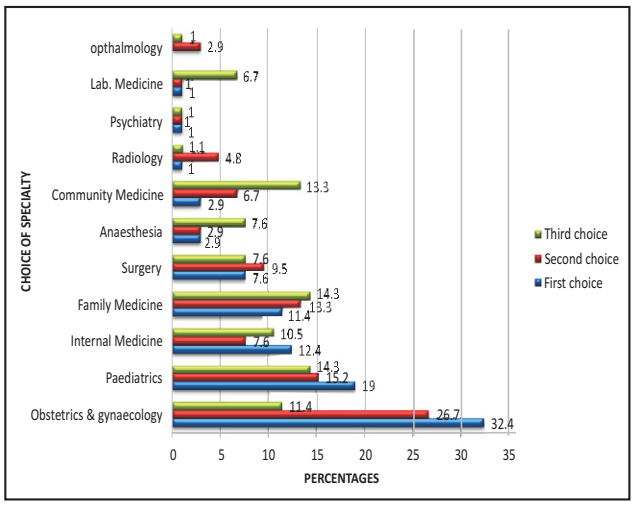

Figure 1. Ranking of specialty choices of final year medical students at the University of Calabar, Nigeria

Overall, the most preferred specialty amongst the students interviewed was Obstetrics and Gynaecology. This was followed by Paediatrics and Family Medicine. The most preferred specialty of first choice was Obstetrics and Gynaecology (32.4%), this was followed by Paediatrics (19.0%) and Internal Medicine (12.4%) was in third place. However, Anaesthesia remained in the 5th, (2.9%) 7th (2.9%) and 6th positions (7.6%) respectively when ranked in 1st, 2nd and 3rd choices (Figure 1).

Table 1. Perception of anaesthesia posting and specialty by of final year medical students at the University of Calabar, Nigeria

Characteristics	Frequency	Percentage
What do you think of anaesthesia as a specialty		
Interesting and important	64	61.0
Too technical	12	11.4
Boring	7	6.7
Too demanding	6	5.7
Interesting but unimportant	5	4.8
What do you think of your anaesthesia posting		
Interesting	44	41.9
Very educative	27	25.7
Too short	24	22.9
Uninteresting	10	9.5

Table 2. Factors influencing choice of specialty among final year medical students at the University of Calabar, Nigeria

Factors influencing choice of specialty*	Frequency n	Percentage (%)
Personal interests	85	81.0
Future job opportunities in the field	66	62.9
Technically challenging specialty	49	46.7
Opportunity for private practice	47	44.8
Easily compatible with having a family	44	41.9
Inclination of specialty before entering medical school	38	36.2
A wide variety in caseload	31	29.5
Influence from a mentor	31	29.5
Low risk of litigation	17	16.2
Gender distribution in specialty	12	12.4

*multiple response

Student's perception of anaesthesia as a specialty and posting (Table 1) showed that 46 (44%) reported that their anaesthesia posting was interesting while 27 (23%) found it very educative. More than a fifth, 24 (23%) reported that the duration of the posting was too short while 64 (61%) were of the opinion that anaesthesia was an interesting and an important specialty but 12 (11%) thought it was too technical and boring. Table 2shows the factors which influenced their choice of specialty. The commonest factors which influenced choice of specialty amongst the respondents included personal interests 85 (81%), future job opportunities 66 (63%) and requirement of specialized skill 65 (62%). Influence by a mentor was chosen as a factor by 31 (30%) of the respondents.

Discussion

This study agrees with previous reports, that there is a very low level of interest for anaesthesia amongst medical undergraduates.[5,6]In the 1980s, in Lagos University Teaching Hospital none of 54 students studied selected anaesthesia as first choice.[5]The specialty ranked sixth amongst 67 final year medical students in another institution in Western Nigeria.[7] Eighty per cent of them found anaesthesia interesting and important but none would pick anaesthesia as a first choice for a future career, while one-third of the students studied did not even consider it.[6]In Israel just 1% of their medical graduates[9] and 5-6% of medical graduates in the United States chose anaesthesia.[10] This however contrasted significantly with 17.7% of Australian medical students intending to choose anaesthesia.[11]

Our finding revealed a disturbing trend in our centre. A similar study done by Ilori and colleagues[2] a decade ago in the same centre showed that 8% of students chose anaesthesia as specialty and that placed anaesthesia at the 4th position. However, our study shows that only 4.5% of graduating students chose anaesthesia putting it in the 7th position as choice specialty. This has serious implication for the future work force of physician anaesthetists. The present study further revealed that the majority of the students interviewed (61%) were of the opinion that the specialty was interesting and this was higher than that observed in a study by Akinyemi et al[7] in South-Western Nigeria in which 36% of the students viewed anaesthesia as interesting. This did not however translate to more students choosing anaesthesia. Furthermore, slightly over a tenth, perceived anaesthesia specialty as being too technical which may further contribute to the unattractiveness of the specialty.

Anaesthesia is taught to medical students at various universities using different duration and content.[12] At the University of Calabar the exposure is for two weeks. If these students are given a positive undergraduate experience by way of thorough teaching and lecturing, future recruitment into most disciplines of medicine including anaesthesia may be enhanced.[8] This point was buttressed in a study by Notzer and colleagues[13] where intense dedicated clerkship in oncology led to 25% of the medical students considering this branch of medicine.

The most common reasons behind choosing a career amongst the undergraduate medical trainees were personal interests and as future job opportunity in the field and requirement of specialized skill. Personal interest was also seen as reason in a study done in Pakistan.[4]Also in a survey of over 5000 new medical graduates in the UK, 45% of them were influenced in their choice of career by the exposure they had to the specialties as undergraduates, while 25% of them were influenced by a role model.[14] This was consistent with findings in our study that almost a third (30%) of the respondents were influenced by a mentor. In a similar study, two-thirds of students identified a positive role model in their anaesthesia teachers and that this was significantly associated with a satisfactory learning experience and a career intention in anaesthesia.[11]

Several studies have suggested that there are areas that are often inadequately taught at under graduate level.[15,16] In addition, short duration of exposure to anaesthesia, insufficient participation in practical anaesthesia sessions and lack of provision of adequate teaching aids such as manikins have been cited as contributory factors to the problem of limited or non interest in anaesthesia.[8] This has resulted in the diminishing of medical students' clinical skills such as

basic airway management, acute and chronic pain management and basic life support.[17]To circumvent this problem, it is recommended that students be made to learn advanced anaesthetic skills while on posting to anaesthesia as such students are more likely to be interested in anaesthesia as a career.[11]

Considering that anaesthetists have a very important role in medicine and medical education, the challenge of recruiting young medical graduates into it has remained a daunting task. About three decades ago, Levin et al[20]noted that the lack of interest in anaesthesia as a specialty was because anaesthesia was seen as unchallenging and lacking in primary patient care. This was attributed to lack of early exposure to the specialty. This opinion was however not the case in a study by Ene and Akpan[5] who found out that despite early and intense exposure to the specialty, senior medical students still did not choose a career in anaesthesia.

One major implication of our finding is a reduction in work force and subsequent overburdening of the existing work force. Currently, anaesthesia has widened its scope of practice to involve diagnostic procedures for paediatrics, radiology, gastroenterology and respiratory medicine. Other areas include lithotripsy, dental surgery, palliative care, trauma care, resuscitation, emergency medicine and transport of the critically ill.[21] This in addition to its classic role of providing the best and safest conditions for the performance of surgery following preoperative assessment and postoperative care in the recovery rooms, obstetric analgesia (epidurals) in delivery rooms and the running of intensive care units, pain clinics and acute pain services.[22] The growth and advancement of surgery would be stunted without adequate supply of anaesthetists.

Another implication for consideration is increase in the role of the non-physician anaesthetist. This stems from the paucity of physician anaesthetists. The ratio of anaesthetist to the population in Nigeria is 1:300,000.[23] A favourable outcome of surgery is dependent on the calibre of personnel and safety of the anaesthetic administered. More morbidities and mortalities in this era of "safe surgery saves lives" would be appalling. Some associations such as the Israel Medical Association and the Israel Society of Anaesthesiologists strongly believe that replacing physicians with technicians or nurses is a dangerous step that may cause deterioration in the level of practice and patient safety.[9] In the study of students in Jordanian university medical schools, none of the male students chose a career in anaesthesia. This was attributed to the increase in the number of nurse anaesthetists employed at university hospitals, which seemed to suggest to the students a lack of career opportunities in this field.[24]

Certain limitations of the study should be recognized. This is a single centre study and the findings may not be generalized to medical students of other universities. A multicentre study would circumvent this. The cross-sectional nature of the survey did not allow for inferences to be drawn as to causal relationship among variables.

Conclusion

As has been seen in this and a similar study in the same setting a decade ago, [2] the trend of the dearth of anaesthetists may continue into the next decade if the situation is not rectified. Previous studies have shown that increasing the exposure of the students to anaesthesia alone did not equate to more students choosing the specialty. Skill acquisition laboratories replete with manikins for peripheral and central line placement, cardiopulmonary resuscitation, and automated external defibrillator should be provided. Simulations in these laboratories on peripheral nerve blocks, central neural blocks and airway skills should be routinely done for all undergraduates training in anaesthesia. This will make anaesthesia real and attractive to them as a career choice. The potential for young physicians specialising in the field of anaesthesia is minimal as few of them are interested in choosing anaesthesia as a specialty. The ultimate goal of the anaesthetist is the provision of safe anaesthesia. The medical student needs to be exposed to a good working knowledge of the roles and responsibilities of the anaesthetist within and outside of the operating theatre in order to make the specialty attractive to them.

Conflict of Interest

None declared in this work.

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