

Factors influencing the choice of anaesthesia as a field of specialty in University of Ghana School of Medicine and Dentistry, Korle-Bu Teaching Hospital

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Background: Specialisation is perceived as essential for success, and affects the availability and distribution of medical personnel and the quality of service the health system is able to deliver. In Ghana, some areas of medical specialties have a relatively good number of practitioners and are constantly attracting prospective doctors into these fields. Anaesthesia, which is an essential and integral part of the health care system, is one field with an inadequate workforce and has been attracting few doctors into the specialty.

Method: A cross-sectional study was conducted among 183 undergraduate final-year students of the University of Ghana School of Medicine and Dentistry. A total of 183 self-reporting questionnaires were distributed among the students during tutorials for their final exams. Of these, 146 questionnaires were completed and returned.

Results: General surgery was the most desirable specialty 26 (17.8%), paediatrics was the second most desirable specialty 24 (16.4%), whilst anaesthesia 2 (1.4%) ranked seventh.

Conclusions: The results of this survey suggest that duration of exposure during clinical clerkship influences career decision among undergraduate medical students. Most of the students prioritise their choice of specialty based on interest and exposure during rotation through the specialty.

Keywords: anaesthesia, medical students, specialties

Introduction

Specialisation is perceived as essential for success in the medical field and affects the availability and distribution of medical personnel and the quality of service a health system is able to deliver.^{1,2} There is little understanding or established data on how different medical specialties are perceived or how specialty preferences are made by medical students. Multiple factors have been found to influence the choice of specialty in the medical education. These range from an individual's characteristics, perceived benefits and attractiveness of particular specialties and factors associated with medical school curricula among others.¹

Trends in career choice vary from country to country and even in the same country over a period of time.² In Ghana, some areas of medical specialisation have a relatively good number of practitioners and are constantly attracting prospective doctors into these fields over others. Anaesthesia, which is an essential and integral part of the health care system, is one field with an inadequate workforce and, comparatively, has been attracting few doctors into the specialty. As at the end of December 2014, there were over 150 consultant/specialist surgeons as opposed to just over 30 consultant/specialist anaesthetists at the Korle-Bu Teaching Hospital. Thus, the surgeon to anaesthetist ratio was 5:1. This ratio is, however, below the internationally accepted minimum ratio of surgeons to anaesthetists, which is 4:1.³

Due to the limited number of anaesthetists available at the Korle-Bu Teaching Hospital, only a limited number of patients who require anaesthesia services can be attended to at any given time. Not only does this limit the number of surgical procedures

that can be performed, but also contributes to the long waiting time at the pre-anaesthesia (assessment) clinic and case cancellations (postponements), which contribute to the ever growing numbers of patients on the surgical waiting lists. This low surgeon to anaesthetist ratio causes stress not only to the patients but to the surgeons and the anaesthetists as well. The few anaesthetists available are overwhelmed by the caseload, which in turn affects the training of surgeons. With improvements in surgical techniques and developments in anaesthesia, more surgical procedures are being done. As life expectancy increases in the country, there will be a concomitant increase in the surgical interventions required by the population. Hence, increased numbers of surgeons and anaesthetists are also required. Though the intake into surgical residency has been increasing over the years, the same cannot be said about the anaesthesia specialty.

Therefore, the aim of this study is to explore the factors influencing the choice of anaesthesia as a field of specialty among final-year medical students in University of Ghana School of Medicine and Dentistry, Korle-Bu Teaching Hospital.

Method

A cross-sectional study was conducted among undergraduate final-year students of the University of Ghana School of Medicine and Dentistry during tutorials for their final exams.

The study was approved by the University of Ghana School of Medicine and Dentistry Ethical and Protocol Review Committee. All the study participants had undergone five weeks of anaesthesia clerkship as part of their rotations during the final year.

Questionnaire

The questionnaire outlined common medical career choices including anaesthesia and students were asked about their preferences for specialisation. The career choices include general surgery, obstetrics and gynaecology, paediatrics, internal medicine, psychiatry, ophthalmology, dermatology, anaesthesia, radiology, public health, pathology, and ear, nose and throat (ENT). The option for a choice other than the listed ones and 'not yet decided' were also available on the questionnaire. A question relating to reasons for not choosing anaesthesia as a field of specialty was included.

Results

Of the 183 self-reporting questionnaires distributed 146 questionnaires were completed, giving a response rate of 79.8%.

Males constitute the greater proportion of the respondents as compared with females. The age of the respondents ranged from 18 to 37 years with the majority, 118 (80.8%), within 23 to 27 years as shown in Table 1. In total, 124 (84.9%) students had decided on preferred areas of sub-specialisation whilst 22 (15.1%), were still undecided (see Table 2). General surgery and paediatrics were the most preferred specialties among the respondents (see Table 3). Internal medicine, obstetrics and gynaecology, public health, and ophthalmology followed in decreasing order of preference. Radiology, psychiatry and anaesthesia ranked seventh whilst pathology and ear nose and throat (ENT) ranked eighth. Others include cardiothoracic surgery: 1 (0.7%), cardiology: 1 (0.7%), family medicine: 6 (4.1%), orthopaedic surgery: 4 (2.7%), and neurosurgery: 1 (0.7%). Male students form the greater proportion in all the specialties chosen except for paediatrics and ophthalmology, where female students form the greater proportion.

Of the 26 students who chose surgery, 15 (57.7%) of the students chose surgery because they have an interest in surgery, 6 (23.1%) chose surgery because they enjoyed their surgery clerkship, 4 (15.3%) chose surgery because surgery provides relief to the patient immediately after intervention and 1 (3.8%) of the students was inspired by a professor in the field. Ten (41.7%) of the students who chose paediatrics did so because they enjoyed their paediatrics clerkship, 7 (29.2%) chose paediatrics because they have affection for children and 7 (29.2%) of the students also chose paediatrics because they have an interest in that field.

Reasons for not choosing anaesthesia by the students are: anaesthesia is 'boring and not interesting', 'complex and difficult to understand', 'delicate and risky' and very 'demanding', as shown in Table 4. Forty (15.3%) of the students did not give any reasons for not choosing anaesthesia.

Discussion

This is the first study in Ghana exploring factors influencing the choice of anaesthesia as a career preference among undergraduate medical students in the University of Ghana School of Medicine and Dentistry. While there are clear common patterns of more male than female students in the School of Medicine and Dentistry, there are also differences in terms of age and specialty preferences among the students.

In this study, the majority of the 2013/2014 undergraduate medical students in their final year in the University of Ghana School of Medicine and Dentistry do not plan to pursue a career in anaesthesia. General surgery was the most preferred specialty

Table 1: Demographic characteristics of the final-year medical students

Demographic	Frequency
Age group	
18–22	3 (2.1%)
23–27	118 (80.8%)
28–32	23 (15.8%)
33–37	2 (1.4%)
Gender	
Male	80 (54.8%)
Female	66 (45.2%)

Table 2: Specialty choice by the final-year medical students

Specialty	n	Male	Female
Surgery	26 (17.8%)	21	5
Paediatrics	24 (16.4%)	5	19
Internal medicine	23 (15.8%)	13	10
Obstetrics and gynaecology	13 (8.9%)	8	5
Public health	12 (8.2%)	7	5
Ophthalmology	5 (3.4%)	2	3
Radiology	2 (1.4%)	2	0
Psychiatry	2 (1.4%)	1	1
Anaesthesia	2 (1.4%)	0	2
Pathology	1 (0.7%)	1	0
Ear, nose and throat (ENT)	1 (0.7%)	0	1
Others	13 (8.9%)	9	4
Not yet decided	22 (15.1%)	11	11

choice (26; 17.8%) whilst anaesthesia was among the least preferred specialties (2; 1.4%). This finding is similar to a study conducted in south Africa by Dambisya *et al.*⁴ in 2003, indicating a very low number of medical students (1.2%) who opted to pursue a career in anaesthesia as compared with surgery (27.6%), internal medicine (25.8%), obstetrics and gynaecology (19.6%) and paediatric (14.1%) specialties. Similarly, a study in Nigeria by Oku *et al.*⁵ in 2014 among graduating medical students at the University of Calabar showed that obstetrics and gynaecology (32%) and paediatrics (19%) were among the most preferred

Table 3: Final-year medical students' reasons for choosing surgery and paediatrics as field of specialty

Reasons	Frequency
Surgery	
'Have an interest in surgery'	15 (57.7%)
'Had a great time during my surgery rotation'	6 (23.1%)
'You easily see results after intervention'	4 (15.3%)
'Inspiration by a professor in surgery'	1 (3.8%)
Paediatrics	
'Have an interest in paediatrics'	7 (29.2%)
'Have affection for children'	7 (29.2%)
'Enjoyed my paediatrics rotation'	10 (41.7%)

Table 4: Final-year medical students' reasons for not choosing anaesthesia as a field of specialty

Reasons	Frequency
'Boring and not interesting'	55 (38.2%)
'Complex and difficult to understand'	11 (26.4%)
'Delicate and risky'	9 (6.3%)
'Demanding'	9 (6.3%)
No reason	40 (15.3%)

choices while only 3% wanted to specialise in anaesthesia. However, the results from this study differ from other studies that show a high number of students pursuing a career in anaesthesia.⁶ The reasons for anaesthesia not being chosen by the majority of students are related to duration of clerkship, stress, danger and risk associated with anaesthesia. The majority of the students (41.7%) who chose paediatrics as a career indicated that they enjoyed their clerkship in paediatrics while six (23.1%) students of surgery indicated the same reasons for their choice. Most of the students found anaesthesia very boring and not interesting while a few of the students found it very risky and difficult to study.

The period of clerkship students undergo during their training in the various sub-specialties may have an influence on their choice of preferred areas of sub-specialisation. In the University of Ghana School of Medicine and Dentistry, students go through only four weeks of rotation in anaesthesia. The fifth week is used for revision and examination in anaesthesia. In surgery, paediatrics, medicine and obstetrics and gynaecology, which were the most preferred specialties among the students, they go through 12 weeks of clinical clerkship in each department during their senior and junior clerkship, making a total of 24 weeks at the end of medical school. It has been shown by Khan *et al.*,⁷ in 2011, that a four-week clinical clerkship in anaesthesia significantly improved the graduating students' attitude towards anaesthesia as a specialty. However, in this study, a negative effect was found. Also a study by Shapiro *et al.*⁸ in 2007 found that most medical students, house officers and medical officers decided on the primary care specialty they ultimately choose during their clinical clerkship. Therefore duration of exposure during clerkship plays very important role in choice of specialty.

Anaesthesia has long been identified as a stressful specialty.⁹ In this study, medical students would not want to specialise in anaesthesia because they considered the specialty to be very demanding and stressful.

Gender also has always been an important determinant of career choice, with women more likely to prefer part-time work and

opportunities to combine work and personal life.^{5,6} Men are typically more attracted by technical challenges, prestige and learning potential.⁶ In line with this, females were found to opt for careers in community-based areas and social medicine, whereas males were found to be more inclined to hospital-based specialties. This is evidenced in the current study, although the results of this study could not substantiate the influence of gender on specialty preferences. However, specialty preferences reflected a certain gender-related pattern, with men favouring surgery, and women favouring paediatrics. Most of the female students chose paediatrics as a field of specialty because of their affection for children, whilst most of the male students chose surgery because of their interest in the specialty.

Conclusions

The results of this survey suggest that duration of exposure during clinical clerkship influences career decision among undergraduate medical students. Most of the students prioritise their choice of specialty based on interest and exposure during rotation. The 2013/2014 final-year medical students found anaesthesia 'boring and not interesting', and 'very demanding and risky'. This is important, as it means these reasons have to be taken into account during curriculum design and in improving quality of the learning environment to enhance education and attraction into the anaesthesia specialty.

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