

Does General surgery clerkship make a future career in surgery more appealing to medical students?

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Abstract

Background: Medical students' decreasing interest in surgical careers has raised much concern. This report is to ascertain the influence of surgical clerkship on the perceptions of medical students on prospects of a future career interest in surgery.

Methods: A cross sectional study, involving final year medical students. Information concerning their interest in a surgical career, what they thought of surgery before and after general surgery clerkship was obtained.

Results: A total of 120 medical students participated in the study. The age range was 24 - 36years (mean 27+2). There were 87 (72.5%) males and 33(27.5%) females.

Ten students (8.0%) were interested in surgery before their last surgery clerkship, 18 (15%) Obstetric and Gynaecology, 92(76.6%) others. Those that developed interest in surgery following the clerkship increased to 33 (27.5%) (P<0.001), 34 (28.3%) Obstetric & Gynecology, while other specialties reduced to 53 (44.2%).

One hundred and one (84.2%) (M=71, F=30) students believe they had identified a role model or a mentor during the clerkship, either a consultant or a resident. Eighty eight (73.3%) (M=62, F=26) student who liked and loved surgery at the end of the clerkship identified surgical mentors during their time.

Conclusion: General surgical clerkship has influence on future career in surgery among medical students. Focused and effective mentoring by faculty as well as early exposure of students to positive role models should help to reverse negative impressions held by students.

Key words: Surgery, clerkship, medical students, career

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Introduction

Medical students' decreasing interest in surgical careers has raised much concern in the recent times^{1,2}. This has been attributed to multiple reasons such as desire for a controllable lifestyle, residency length, financial burden as well as stress associated with surgery³⁻⁶. All these factors may be thought to contribute to the decrease in applications to general surgery residency programme⁷. Previous reports^{8,9} have shown that medical students clerkship experience influences specialty choice decision-making process. Medical schools have traditionally depended on good role models as part of the informal curriculum of medical professionalism¹⁰. Exposure to role models in a particular field has been shown to have influenced medical students' choice of that particular field for residency training¹¹. How well surgical clerkship and mentorship influence

medical student's specialty choice in our setting is yet to be determined. A conscious and continuous effort to acknowledge and further organize these attributes of a role model so that medical students and young doctors can emulate is important

At the moment there are a total of 26 consultants/lecturers in surgery Department of our medical school. An average of 150 medical students rotates through surgery at every given time. This gives a ratio of lecturer/student ratio of 1: 5.7 which meets the recommended ratio of 1:6 by the medical and Dental council of Nigeria (the regulatory body for medical education in Nigeria).

This study explored students' views regarding the degree of influence of the interaction during surgical clerkship on prospects of future career in surgery.

Methods

During the academic year of 2005-2006, a total of 120 medical students completed their third year surgical clerkship (phase III, 600Level) at Ahmadu Bello University medical school, Zaria, Nigeria. On completion of the clerkship, which was the last surgery posting before the final examination; all the

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students were asked to complete a structured questionnaire. All the 120 students completed the survey, which was confidential. The questionnaire (Appendix 1) sought their opinions regarding their interest in a surgical career, what they thought of surgery before and after their clerkship and whether they could identify a role model or mentor. This survey was done on the day after completion of the phase III posting.

The phase III posting consisted of 4 weeks on a general surgical team at ABU Teaching Hospital, (a tertiary referral centre) and 4 weeks at an inner – city community hospital in Zaria. In all rotations, students were integral parts of the surgical team with both consultant surgeons and surgical residents active in their teaching. Clinical activities, which usually last for 8h daily, include surgery observation, outpatient clinics, accident and emergency and in-patient consultation. They also participated in bed side teaching rounds led by a consultant surgeon and/or a senior surgical resident. In addition to the 8 hours, students took night calls with the rest of the surgical team so that they will be exposed to wide spectrum of surgical problems and emergencies that occur during the evening and night time hours. They were also assigned weekly, a small group case presentation. This offered an opportunity for a vigorous, intensive clinical training and exposure.

Before this stage (phase III, 600 Level), the surgical postings already completed by the students included;

300 Level (Introductory posting): 4 weeks

400 Level (Phase I clerkship): 8 weeks

500 Level (Phase II clerkship): 8 weeks

The entire clerkship (Table 1) affords an extensive clinical exposure of medical students.

The data was analyzed using SPSS version 11.0. The chi-square test was used to test for proportions. The critical level was set at 0.05 for all statistical tests.

Table 1: The entire clerkship programme

Phase	Department	Duration
Introductory First year (400L) of clinical posting		
Group A	Surgery	4 weeks
Group B	Internal Medicine	4 weeks
Group A	Internal medicine	4 weeks
Group B	Surgery	4 weeks
PHASE I		
Group A	Surgery	8 weeks
Group B	Internal medicine	8 weeks
Group A	Internal medicine	8 weeks

Continuation of table 1

Phase	Department	Duration
Group B	Surgery	8 weeks
Laboratory posting+ exam	Laboratories	16 weeks
PHASE II Second year (500L) of clinical posting		
Group A	Surgery	8 weeks
Group B	Internal medicine	8 weeks
Group A	Internal medicine	8 weeks
Group B	Surgery	8 weeks
Obstetric & Gynaecology, Paediatric+Exam	O&G, Paediatric, Anaesthesia, orthopaedic	16 weeks
PHASE III Third year (600L) of clinical posting		
Group A	Surgery	4 weeks
Group B	Rural surgery	4 weeks
Group A	Rural surgery	4 weeks
Group B	Surgery	4 weeks
Final MB;BS examination		

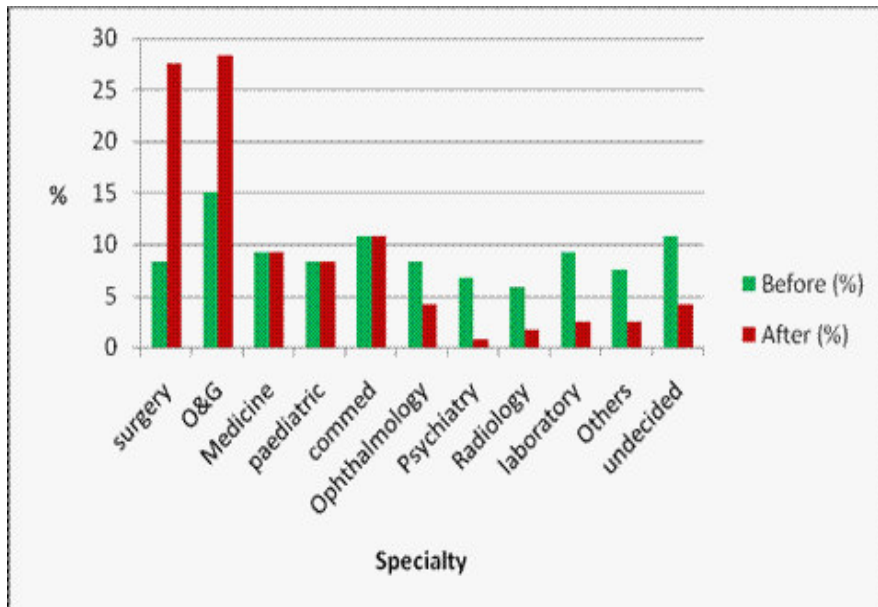
Results

A total of 120 medical students in the class participated in the study, given a response rate of 100%. Their age range was 24 - 36 years (mean 27+2) (M=27.65 years, F=25.82 years). There were 87 (72.5%) males and 33 (27.5%) females. Ten students (8.0%) M=8 F=2 were interested in surgery before their phase III surgery clerkship. While the proportion of medical students that developed interest in surgery following the clerkship increased to 33 (27.5%) (M=26, F=7) (P=0.0014) (Table 2 and figure 1)

Table 2: Choice of specialty before and after clerkship

Specialty	Number (%)	
	Before Clerkship	After Clerkship
Surgery	10 (8.0)	33 (27.5)
Obstetric & Gynaecology	18 (15)	34 (28.3)
Community Medicine	13 (10.8)	13 (10.8)
Internal Medicine	11 (9.2)	11 (9.2)
Laboratory Medicine	11 (9.2)	3 (2.5)
Paediatric	10 (8.3)	10 (8.3)
Ophthalmology	10 (8.3)	5 (4.2)
Psychiatric	8 (6.7)	1 (0.8)
Radiology	7 (5.8)	2 (1.7)
Undecided	13 (10.8)	5 (4.2)
Others	9 (7.5)	3 (2.5)
Total	120 (100)	120 (100)

Figure: 1 Choice of specialty before and after surgery clerkship

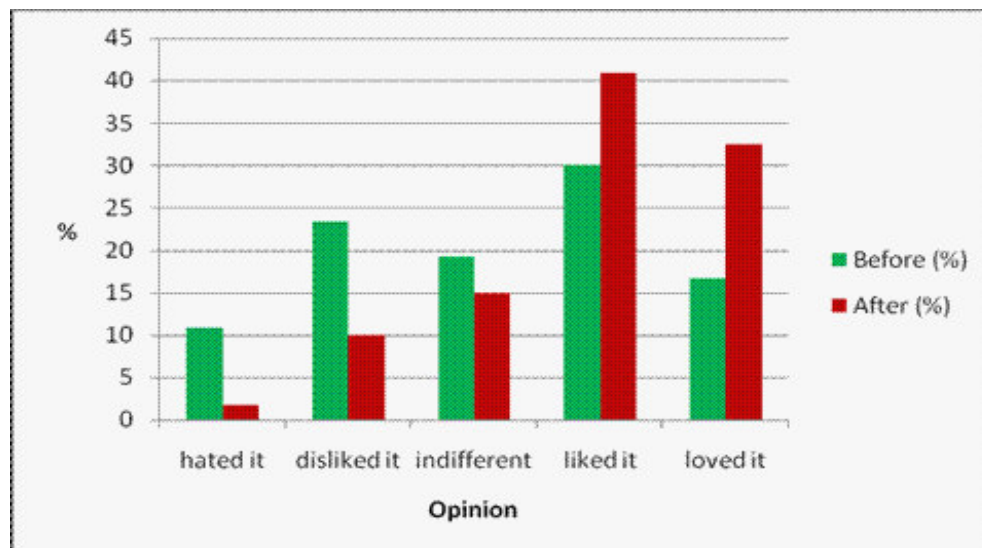


The surgery clerkship positively influenced students perception of surgical careers significantly ($P < 0.001$). Twenty three medical students, in addition to the initial ten, had a change of perception and developed interest in surgery and all of them had identified a mentor during the clerkship. In the rating of surgery before and after the clerkship (Table 3 and figure 2), the number of students that loved surgery increased to 39 (32.5%) ($P < 0.001$) after surgery clerkship.

Table 3: Rating of Surgery before and after clerkship

Rating	Number (%)	
	Before Clerkship	After Clerkship
Hated Surgery	13 (10.8)	2 (1.7)
Disliked Surgery	28 (23.3)	12 (9.9)
Indifferent of Surgery	23 (19.2)	18 (15.0)
Liked Surgery	36 (30.0)	49 (40.8)
Loved Surgery	20 (16.7)	39 (32.5)

Figure 2: Rating of surgery before and after clerkship



A significant number ($p < 0.001$), 101 (84.2%) ($M = 71$, $F = 30$) students believe they had identified a role model or a mentor during the clerkship, either a consultant = 62 or a resident = 49. Eighty eight (73.3%) ($M = 62$, $F = 26$) student who liked and loved surgery at the end of the clerkship identified surgical mentors during their time. In comparison, 68 (56.5%) ($M = 45$, $F = 23$) of the students who did not have a positive view or interest in surgery had identified mentors. Identifying appropriate role models and mentors likely had a significant impact on our students ($P < 0.001$).

Discussion

Declining enrolment into general surgery residency has generated much concern in recent times⁷. Changing values and professional goals in medical school graduates, desire for controllable lifestyle, and job stress of surgery have been suggested as possible causes⁴⁻⁶.

Medical students rotate through their surgery clerkship, interacting significantly with consultant surgeons and surgical residents. They are put through clinical activities in the wards, clinics, operating theatre sessions, and accident and emergency unit. The interactions occupy most of the student's day. This offers an opportunity for clinical exposure for many students.

In the present report, we sought the perceptions of final year medical students in our institution. More students developed interest in surgery after their surgery clerkship. It has been shown in previous reports that surgery is one of the most preferred specialties among medical students^{12,13} and pre-registration house officers,¹⁴ a stage that immediately follows graduation as a medical student. However, the proportion of students who will actualize their interest in surgery is not known.

Surgical clerkship is usually regarded as a popular and acclaimed clinical rotation during which students are exposed to intense clinical work¹⁵⁻¹⁷. Surgical residents and consultant surgeons usually put the students through clinical activities in the wards, clinics, operating theatre, and accident and emergency room. Small group case presentations are parts of the clinical activities that the students are exposed to. Senior clerkship (phase III, 600L) along with the accumulated experience overtime (phase I and II) was thought to have provided a broad based and comprehensive exposure of medical students to the discipline of surgery. This may make it easier for

medical students to make a well informed decision or surgical opinion. The close association of the students with both residents and consultant during these clinical activities has been shown to enhance identification of role models¹⁹⁻²². An obvious discrepancy between the fact that surgery is a preferred specialty among medical students and pre-registration house officers, and a declining enrollment in postgraduate surgical programmes requires an urgent attention. This is important because if this trend is allowed to continue, in future, there would be fewer surgeons practicing surgery. This probably, further lends a support to the role of surgical mentorship. Their personal idealism wanes as they become distanced from their mentors after graduation and adopting the idealism of the society and non medical friends¹⁰.

Role models have been noted to be a key factor in students' recruitment into surgery and there have been calls for increased attention to surgical mentoring^{20, 23}.

Published data suggest that early exposure to positive role models is critical in attracting and maintaining students' interest in general surgery^{19,20,23}. The present study shows that exposure to role models in this institution is important in maintaining interest of medical students. It was encouraging that 68 (56.5%) of the students who did not have positive views or interest in surgery had identified a mentor following their surgery clerkship.

Conclusion

Laying bare the humanistic values of surgery during medical school should be as early as possible^{24,25} but assurance that sacrifices and commitments could be compensated may be necessary. Early involvement of students in mentorship and exposure to positive role models is useful.

Limitation of the study

The fact that the questionnaire was not administered to the students before and after each phase of the surgical clerkship. This should be the focus of a follow up study.

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