Factors Influencing Career Choice of Surgical Specialties Among Clinical Medical Students of a Medical University in Southwestern Nigeria

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Abstract

Introduction: After acquiring a Bachelor of Medicine, Bachelor of Surgery (MBBS) degree, the decision to choose a future specialty becomes critical for every student's life, as it determines the rest of their career path. Numerous factors could influence medical student career choice. The objectives of this study was to assess the factors influencing career choice of surgical specialties among clinical medical students in the University of Medical Sciences (UNIMED), Ondo Nigeria.

Methodology: This was a cross sectional study carried out among 124 clinical medical students of UNIMED Ondo selected using a 2 stage sampling method (simple random and systematic methods). Data was collected through a structured, pretested Google form, responses were imported into Microsoft Excel and the resulting data was analyzed using the SPSS software version 25.0.

Results: Forty-seven (37.9%) said they have assisted a surgical operation before. Sixty-three (50.8%) are willing to make a future career in the surgical specialties, their choice of subspecialties included Obstetrics and Gynecology 13(20.6%), General surgery 12(19.0), and the surgical subspecialties like cardiothoracic and Ophthalmology 35(54.0%). Seventy-seven (62.1%) of the respondents said they were inspired by a teacher or mentor. Common reasons given as motivating factors for choosing a future surgical career include that it is financially rewarding (11.6%), that it brings fulfillment (9.9%), that it brings job satisfaction (22.3%) and that there is huge opportunity of travels probably outside the country for greener pastures (32.2%). Predictors of willingness to go into a surgical specialty career in the future is been inspired by a teacher/mentor/role model and having assisted a surgical procedure.

Conclusion: Only about half of our respondents are willing to make a future career in the surgical specialties. Medical schools could also organize orientation workshops that could guide students career choice along the course of their training.

Keywords: Surgical specialties, Future career, Willingness, UNIMED Ondo

I. INTRODUCTION

The medical students of today shall grow into the medical doctors and specialist consultants of tomorrow in the various subspecialties. During undergraduate training, medical students pass through a series of postings which encompasses a broad range of all medical specialties. After an undergraduate study, making a choice of specialty often involved further graduate studies in one of the many aspects of the profession, though specializing is a choice and a doctor may decide not to specialize. The choice of a specialty becomes a critical decision for every student especially for those who will proceed further to a postgraduate

career. Numerous factors could influence medical student's career choice.[1,2]

The role of the Faculty, the University in providing good quality information and careers guidance in support of the young ones who may aspire into their profession cannot be overemphasized. The relevant professional bodies may also have synergistic role to play but this category of people has minimal access to the students. The ability of the medical school to organize career prospect sessions could provide more insights, or else, this could make the matter worse. Eventually, students are put at the mercy of those expectations and experiences gained during their clinical posting to making career choice. This trend of career choice selection could also leave many of the medical students undecided and uncertain of their future.

The surgical specialties include surgery and Obstetrics and Gynaecology, and these are more endangered because most of their subspecialties are evolving, expanding and the general scope is not known to many.[3,4] The likelihood of students' inability to distinguish general surgery from others sub-specialties, and anesthesia from other specialties in surgery often leaves the students in confusion. This confusion may become compounded students when students are not introduced to the advantages, rigorousity and lucrativeness of such surgical specialties among other factors. This study's findings could be useful in guiding policymakers' desire to encourage specific recommendations that will encourage certain categories of specialists, and therefore resulting in a more balanced distribution of specialist physicians. This objective of this study was to assess the attitudes and willingness of clinical medical students in making a choice of surgical and Obstetrics/Gynecological specialties as a future career in the University of Medical Sciences (UNIMED), Ondo, Nigeria.

II. METHODOLOGY

Study Area: The study was carried out at the University of Medical Sciences, Ondo in Southwestern Nigeria. The University is the first specialized medical and health University in Nigeria. The MBBS programme is the only course being run in the Faculty of Clinical Sciences. There are a total of 162 clinical students undergoing various postings, including Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics, Anaesthesia, and Radiology among others. These courses are being taken in the last 30 months of their training.

Study Design: This was a descriptive cross-sectional study.

Study Population: This study was carried out among clinical MBBS students in the University, that is, students who are on clinical posting in their 400-600 levels. Non MBBS students on posting and uncooperative respondents were excluded from the study. The clinical specialties are defined as those students who may wish to specialize in the various fields in Surgery, and Obstetrics & Gynaecology, Radiology and Anaesthesis.

Sample size estimation: Sample size was estimated using the modified Leslie Fishers formular for the calculation of sample size in a single population less than 10,000.[5] A sample size of 110 was rounded up to 121 to cater for attrition and non-responses.

Sampling Methods: A two-stage sampling methodology was employed in subject selection. Students in the four core clinical postings were targeted for this study, two out of 4 subgroups in each class were selected by simple random sampling, employing simple balloting. Using the class list as a sample frame, a systematic sampling of one in 3 students on the group list was drawn after selecting the first respondents at random. This continued until the desired sample size was achieved.

Data Collection: The research instrument was essentially a Google form designed for this purpose. This consist of structured questions, which was earlier pretested among MBBS clinical students in Obafemi Awolowo University (OAU), Ife in Osun State. Data collection was done by interviewing the selected students and ensuring that they responded to the questions confidentially as well as submit the form.

Study variables included awareness, knowledge, attitude and choice of surgical specialties in the nearest future after completion of their medical education.

Data Analysis: Data was downloaded from the Google form and the responses imported into Microsoft Excel and were eventually analyzed using the IBM SPSSS version 25.0. Validity of data analyzed was done by manual checks and looking for outlier values. Frequency distribution tables were used in presenting univariate data, bivariate associations were tested with Chi squared test while binary logistic regression was used to test the strength of associations found significant on bivariate analysis at a significant p value less than 0.05.

Ethical Consideration: Approval to conduct the study was taken from UNIMED Health Research Ethical Committee, an informed consent was taken from each respondent and they all signed the voluntarism statement after reading the objectives of the study to them in writing.

III. RESULTS

A total of 114 responses were analyzed. Table 1 shows the socio-demographic characteristics of the sampled

medical students. The majority (93.5%) belong to the 20 - 29 years age group with a mean age of 24.4 (+2.6) years, 77 (62.1% are males, 76 (61.3%) of them were in the 500 level class while only 22(17.7%) of them had a family member or close relation in surgical specialties.

Table 2 shows some information on the clinical postings had by respondents. Fourteen (11.3%) were in their junior posting when they first observed a surgical procedure, 2(1.6%) have not had exposures to surgical procedures during their clinical posting, 25(20.2%) have participated in surgical workshops/extracurricular activities, 47(37.9%) have assisted a surgical operation before, while 52(41.9%) said they were likely to pursue a surgical specialty after graduation.

Among those who are willing to make choose a future career in surgical specialties (63), their choice of subspecialties include Obstetrics and Gynecology 13(20.6%), General surgery 12(19.0), and the surgical subspecialties (e.g. cardiothoracic, Ophthalmology etc.) 35(54.0). Seventy-seven (62.1%) of the respondents said they were inspired by a teacher or mentor. Common reasons given as motivating factors for choosing a future surgical career included that it is financially rewarding (11.6%), that it brings fulfillment (9.9%), that it brings job satisfaction (22.3%) and that there is huge opportunity of travelling probably outside the country for greener pastures (32.2%).

Figure 1 shows that 63(50.8%) of the respondents are willing to take up a future career in surgery, however 44% are currently interested. Table 3 shows that there is an association between willingness to take a future surgical specialty career and been inspired by a teacher/mentor/role model (p 0.002), while there is no association between willingness to take a future surgical specialty career and having assisted a surgical operation (p = 0.108) and gender (p = 0.309). Table 4 is a binary logistic regression of willingness to go into a surgical specialty career in the future. There is no difference in the likelihood of gender being responsible for the willingness of our respondents going into a surgical specialty career in the future; and this observation was found not to be statistically significant (p = 0.087).

Respondents who have assisted a surgical procedure were 2.0 times more likely to be willing to go into a surgical specialty career in the future, compared to those who have not; and this observation was found not to be statistically significant (p = 0.087).

Respondents who have been inspired by a teacher/mentor/role model to consider a surgical specialty were 2.6 times more likely to be willing to go into a surgical specialty career in the future, compared to those who have not; and this observation was found to be statistically significant (p = 0.018). Thus predictors of willingness to go into a surgical specialty career in the future (irrespective of statistical significance) are been inspired by a teacher/mentor/role model and having assisted a surgical procedure.

Table 1: Socio-Demographic Characteristics of the Medical Students

Variable	n	%
Age group (mean age: 24.4 (±2.6) years.		
• 20-29	116	93.5
• 30-39	8	6.5
Gender		
• Male	77	62.1
• Female	47	37.9
Level		
• 400	9	7.2
• 500	76	61.3
• 600	39	31.5
Family members or close relations in surgical specialties		
• Yes	22	17.7
• No	102	82.3

Table 2: Information on Clinical Surgical Posting

Variable	n	%
Stage of medical education at which respondents have first observed a surgical procedure		
• Junior clinical	14	11.3
• Senior Clinical	110	88.7
Exposed to surgical procedures during posting		
• Yes	122	98.4
• No	2	1.6
Have participated in surgical workshops/extracurricular activities		
• Yes	25	20.2
• No	99	79.8
Have assisted a surgical operation before		
• Yes	47	37.9
• No	77	62.1
Likeness to pursue a surgical specialty after graduating from the University		
• Likely	52	41.9
• Unlikely	34	27.4
• Undecided/giving it a thought	38	30.7
Future surgical specialties being considered in the future (n=63)		
• Obstetrics & Gynecology	13	20.6
• Anesthesia	2	3.2
• Radiology	2	3.2
• General surgery	12	19.0
• Surgical subspecialties (e.g. cardiothoracic, Ophthalmology etc.)	34	54.0
Inspired by a teacher or mentor		
• Yes	77	62.1
• No	47	37.9
Common motivators (n=63)		
• Financial reward	14	11.6
• Fulfillment	12	9.9
• Job satisfaction	27	22.3
• Lucrativeness	16	13.2
• Prestige & recognition	13	10.7
• More opportunities e.g. travels for greener pastures	39	32.2

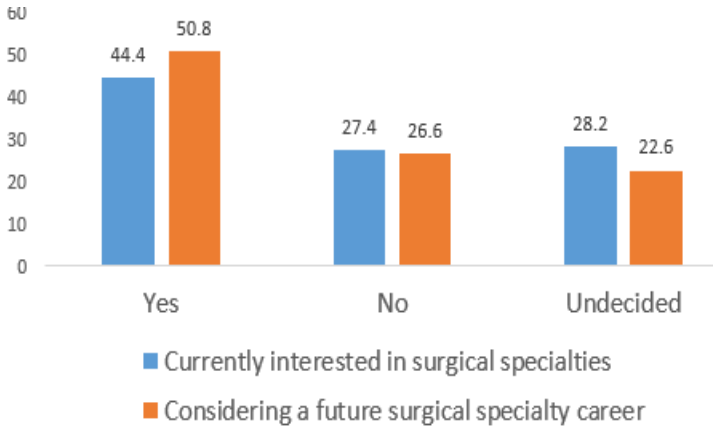

Figure 1: Chart Showing Consideration for Surgical Specialty Now and in the Future

Table 3: Association between Choosing a Surgical Specialty Future Career and Selected Variables

Variable	Considering a future career in surgical specialty		Test Statistics
	Yes	No/Undecided	X^2 / *p* value
Gender			
• Male	35(45.5)	42(54.5)	X^2 2.350
• Female	28(59.6)	29(40.4)	*p* 0.309
Have assisted a surgical operation			
• Yes	29(61.7)	18(38.3)	X^2 4.442
• No	34(44.2)	43(55.8)	*p* 0.108
Has been inspired by a teacher/ mentor/role model to consider a surgical specialty			
• Yes	46(59.5)	31(40.5)	X^2 1.287
• No	17(36.2)	30(63.8)	*p* 0.002

IV.DISCUSSIONS

We studied the willingness of clinical medical students to take on surgical specialty as a future career. Surgery is a core component of medical practice and its importance cannot be overemphasized, as students have to show interest either as a general practitioner or a resident doctor.

In this study, a majority of our respondents have had contact with surgery either as a clinical rotation during medical education or watched as a procedure; a little over one third have assisted in surgical procedures in the past. Two similar studies agreed with this expression. [5,7] However contrary to a similar study in Newfoundland,[4] our study found that there is no statistically significant association on bivariate analysis between considering a future surgical career and having assisted in a surgical procedure. Clinical postings are important, and it may serve as a source of inspiration to many students to take on a particular future career when they are exposed during their medical education.

Table 4: Binary Logistic Regression Associated with Choosing a Surgical Specialty Career in the Future

Variables	Willing to go into a surgical specialty career in the future			
	OR	95%CI		P value
		Lower	Upper	
Gender				
• Male	0.9	0.4345	1.7143	0.806
• Female*				
Have assisted a surgical procedure				
• Yes	2.0	0.9718	4.2724	0.087
• No*				
Has been inspired by a teacher/mentor/role model to consider a surgical specialty				
• Yes	2.6	1.2378	5.5397	0.018
• No*				

**Reference category*

In our study, a little more than half of our respondents were undecided or not taking a surgical specialty in the future. This supports yet another study[8] in which about 42.6% are yet undecided about their future surgical career. This may be due to the fact that medical students are taken through numerous non-surgical postings, and may need more time before taking a decision towards specialty choice. The fear of the future, and some barriers to making a choice, [9,10] are among several factors that the student may wait to consider before making a choice. The fact that nearly half have decided to go for a surgical specialty however portrays good omen for medical practice generally, as this will ensure that these surgical subspecialties will not go into extinction in terms of human resources for health in the West African sub-region.

Many factors were responsible for making a choice of specialty among our respondents who have already decided to try a future in surgery. Common reasons given by our respondents include that it is financially rewarding (one-tenth), job satisfaction (one-fifth) and that there is huge opportunity of travelling overseas for greener pastures (about one-third). These trends had been supported by many other similar studies. Alyazidi et al.[8] reported income as motivation factor among half of their respondents (unlike one tenth in our study). In the same manner, Ilori, Ilori and Ajibade [11] reported financial prospect and prestige as the motivation factors. Our study also reported being able to emigrate as a significant motivator, as surgeons are in high demand all over the world. As medical students traverse the entire duration of the medical school programme, these factors may persist as a source of motivation. Nonetheless, a few of them could change their mind along the line of medical education due to one reason or the other.

In a comparative study, mentorship or advice from a practicing doctor was reported as a significant factor in deciding on a choice of future surgical career.[7] This supports the finding from our study in which an association was found between being inspired by a teacher/mentor/role model and considering a surgical specialty and willingness to take on future surgical career; and this observation was found to be statistically significant (p 0.002), and revealed as a predictor, by binary logistics regression analysis.

V. CONCLUSION

About half of our respondents are considering a future career in surgery. This willingness hinged on a number of motivation factors. However, prior mentorship or advice from a clinician, and assisting in surgical procedures are significant deciding variables. Medical schools could also organize orientation workshops that could guide students career choice along the course of their training, during which medical students can meet with potential mentors and carrier advisers.

CONFLICT OF INTEREST

There is none to declare.

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