

Medical Education

Future specialization interests among medical students in southern India

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ABSTRACT

Background. A consideration of the future specialization interests of undergraduate medical students might help to understand the needs of higher medical education and future manpower availability for healthcare.

Methods. A cross-sectional study was conducted among 373 undergraduate students of a medical college in southern India using a self-administered questionnaire.

Results. Of the 373 students, 188 (50.4%) were men. Almost all of them (370 [99.2%]) wanted to pursue postgraduation. Of these, 267 (72.4%) wanted to pursue postgraduation in India. Overall, the first choice subject was surgery (120 [32.2%]) followed by internal medicine (85 [22.8%]) and paediatrics (43 [11.5%]). The third preference for men and women differed, with men choosing orthopaedics and women choosing obstetrics and gynaecology. The factors that influenced the choice of specialization were interest in the speciality (Likert scale score 4.7), job satisfaction (4.6), employment opportunities (4.0), job security (4) and high income potential (3.9).

Conclusion. It was evident from the proportion of students desiring to do postgraduation and their choice of specialties that most of them will end up working at hospitals instead of at primary healthcare centres. The deficiencies of certain specialists such as ophthalmologists are likely to persist. This is a cause for concern as the majority of our population lives in rural areas and there is already a maldistribution of doctors.

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INTRODUCTION

The career interests of medical students are important, as they are the future workforce of the healthcare profession. Their interests will determine the availability of manpower in each specialty. In India, there are deficiencies of certain specialists such as ophthalmologists and psychiatrists as well as of non-specialist graduate doctors to manage primary healthcare centres (PHCs).¹⁻⁴ Few studies have been done to ascertain the career

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preferences of medical students. A study from Delhi showed that 83.5% students wanted to pursue postgraduation.⁵ The choice of specialty was limited to a few subjects such as surgery, internal medicine and obstetrics and gynaecology. Globally, the choice of subject seems to be surgery for men and obstetrics and gynaecology and internal medicine for women.⁵⁻⁷ What motivates students to choose certain specialties over others can also provide an insight into what may be required to bring about a balance in manpower availability among various specialties. Studies in developed countries have shown that student education loans and lifestyle factors are important in choosing some specialties.^{8,9} There is a dearth of such studies among medical students in India and hence we did this study.

METHODS

We did a cross-sectional survey of medical students at Kasturba Medical College, Karnataka, India during April 2009. Anticipating the proportion of students opting to do postgraduation would be 83%, with a 5% relative precision and 95% confidence level, the sample size was calculated to be 328. There were four semesters of students at the time of the survey, with 250 students in each. Semesters were divided into two batches of 125 each for the purpose of lectures. It was decided to take one batch from each semester to give even representation to all the batches. Selection of a batch within each semester was done by the simple random method and all students who were present for the lecture on the day of data collection were included. Verbal informed consent was taken and data were collected in a self-administered, semi-structured, pre-tested questionnaire. The questionnaire contained three sections: sociodemographic variables, choice of specialty and reasons for preference. The reasons for preference were scored on a 5-point Likert scale with 1 indicating that the factor had the least influence and 5 the strongest influence on their choice. All responses were anonymized. Data were entered in and analysed using the Statistical Package for the Social Sciences (SPSS for Windows, Rel. 15.0.1, 22 November 2006, SPSS Inc., Chicago, IL, USA).

RESULTS

Of the 373 students who filled the questionnaire, 185 (49.6%) were women. Second semester students were 100 in number, fourth semester 105, sixth semester 83 and eighth 85. The mean (SD) age of the participants was 20.2 (1.6) years. Indian students comprised 90.6% (338) of the study participants, Malaysians 8% (30) and others 1.5% (5).

Almost all the students wanted to pursue postgraduation (370; 99.2%). Of the 369 who had given their country of preference for doing postgraduation, 267 (72.4%) said they wanted to do it in India and 102 (27.6%) wanted to go abroad. Among 69 Indian students who wanted to study abroad, the most popular

choices were the USA (50, 72.5%) followed by Australia (9, 13%) and the UK (6, 8.7%).

Overall, the most preferred specialties were surgery (295) followed by internal medicine (232) and paediatrics (202). The three least preferred choices were biochemistry (9), physiology (8) and microbiology (5). The most popular specialties among men were surgery (178) followed by internal medicine (123) and orthopaedics (110), while for women these were paediatrics (122), surgery (117) and internal medicine (109). There was a preponderance of men choosing some specialties such as orthopaedics, radiology and surgery, while there was a preponderance of women for obstetrics and gynaecology, dermatology and paediatrics (Table I). The specialties that were most popular as first preference were surgery, internal medicine and obstetrics and gynaecology while biochemistry, physiology and microbiology were not the first choice of any student (Table II).

The most preferred country of work after completing their postgraduation was India (274, 73.5%) followed by the USA (40, 10.7%) and Malaysia (26, 7%). Almost a similar number of students wanted to work in government (103/369, 27.9%) and private hospitals (95, 25.7%; Fig. 1).

The factors that influenced the students' decisions to opt for a particular specialty included interest in that particular specialty (average Likert scale 4.7), job satisfaction (4.6), employment scope in the future (4) and job security (4). The other factors included high income potential and working hours (Table III).

DISCUSSION

The choice of specialty of undergraduate medical students has an effect on the national availability of healthcare manpower. There is a need to increase manpower in areas such as primary care, psychiatry and ophthalmology among others in India.^{1,2,4} Understanding the factors that influence students' decisions regarding their future career may help in taking corrective measures.

This study, done at a private medical college in southern India has shown that almost all students (99.2%) wish to pursue postgraduate studies, higher than the 83.5% in the study done at a government medical college in Delhi.⁵ This difference could

TABLE II. Order of preference for various specialties

Preference	Specialty		
	First (%)	Second (%)	Third (%)
Surgery	120 (32.2)	53 (14.2)	47 (12.6)
Internal medicine	85 (22.8)	60 (16.1)	42 (11.3)
Paediatrics	43 (11.5)	59 (15.8)	43 (11.5)
Obstetrics and gynaecology	30 (8)	29 (7.8)	27 (7.2)
Orthopaedics	25 (6.7)	35 (9.4)	27 (7.2)
Radiology	22 (5.9)	27 (7.2)	29 (7.8)
Ophthalmology	8 (2.1)	14 (3.8)	25 (6.7)
Psychiatry	12 (3.2)	11 (2.9)	16 (4.3)
Community medicine	3 (0.8)	5 (1.3)	4 (1.1)
Anaesthesiology	2 (0.5)	8 (2.1)	15 (4)
Dermatology	2 (0.5)	8 (2.1)	12 (3.2)
ENT (Otorhinolaryngology)	2 (0.5)	2 (0.5)	10 (2.7)
Forensic medicine	3 (0.8)	6 (1.6)	4 (1.1)
Pharmacology	1 (0.3)	5 (1.3)	2 (0.5)
Pathology	1 (0.3)	1 (0.3)	3 (0.8)
Anatomy	1 (0.3)	5 (1.3)	4 (1.1)
Biochemistry	0	2 (0.5)	1 (0.3)
Physiology	0	4 (1.1)	1 (0.3)
Microbiology	0	2 (0.5)	1 (0.3)

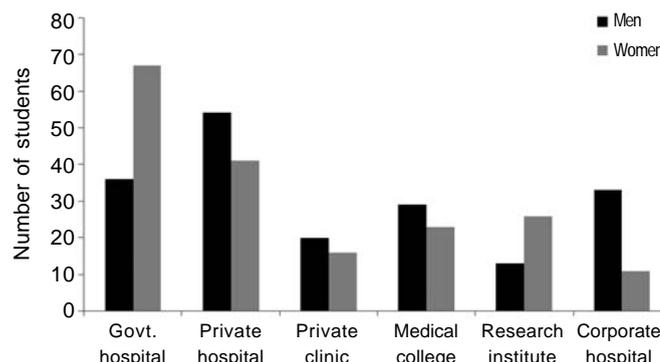


FIG 1. Preferred institution of work

TABLE I. Gender-wise preference of various specialties

Specialty	Men (%)	Women (%)	Total
Surgery	178 (60.3)	117 (39.7)	295
Internal medicine	123 (53)	109 (47)	232
Paediatrics	80 (39.6)	122 (60.4)	202
Orthopaedics	110 (82.1)	24 (17.9)	134
Radiology	80 (61.5)	50 (38.5)	130
Obstetrics and gynaecology	28 (22.4)	97 (87.6)	125
Ophthalmology	45 (47.9)	49 (52.1)	94
Psychiatry	30 (41.7)	42 (58.3)	72
Anaesthesiology	29 (40.8)	42 (59.2)	71
Dermatology	9 (16.7)	45 (83.3)	54
ENT (Otorhinolaryngology)	21 (56.8)	16 (43.2)	37
Forensic medicine	12 (46.2)	14 (53.8)	26
Community medicine	11 (55)	9 (45)	20
Pharmacology	6 (54.5)	5 (44.5)	11
Pathology	4 (36.4)	7 (63.6)	11
Anatomy	5 (50)	5 (50)	10
Biochemistry	6 (66.7)	3 (33.3)	9
Physiology	7 (87.5)	1 (12.5)	8
Microbiology	3 (60)	2 (40)	5
Total	787 (50.9)	759 (49.1)	

TABLE III. Factors that influenced students' choice of various specialties

Factor	Likert scale					Average
	5	4	3	2	1	
Interest in specialty	293	58	10	1	6	4.7
High income potential	139	119	69	21	18	3.9
Affordability of specialty (private college)	107	102	80	23	37	3.6
Job satisfaction	252	73	23	4	9	4.6
Prestige of specialty in society	114	76	89	22	57	3.4
Working hours	70	96	97	36	61	3.1
Focus on non-urgent care	48	68	109	48	72	2.9
Focus on hospital care	85	100	88	32	40	3.5
Wide variety of patient problems	123	94	63	29	41	3.7
Focus on community service	111	82	87	32	41	3.5
Experience with specialty	119	96	87	16	33	3.7
Employment scope in the future	178	93	50	15	14	4.0
Job security	195	81	41	14	23	4.0
Coercion by parents	106	36	91	49	60	2.5

be because (i) that study included only first year medical students, (ii) it was done in a different study setting (government versus private), or (iii) it indicates a changing trend.

More than three-fourths of the students in our study wanted to do their further studies in India. Since the preference for postgraduation abroad is for developed countries, this could indicate that students are looking for better standards of living. As India develops socioeconomically, this trend may decrease. Another reason for students opting to study abroad could be the shortage of available postgraduate seats in India.¹⁰

The choice of specialties showed that surgery, internal medicine and paediatrics were the most favoured. This is similar to observations in a study from Pakistan.¹¹ In a study of Swiss medical school students, the most popular specialties were internal medicine and surgery, followed by primary care.⁶ Though India does not have primary care as a specialty, there were few takers for community medicine, which is the subject closest to primary care. In another study in Greece, the most popular subjects were general surgery followed by cardiology and endocrinology.¹² In India, the latter two are available as sub-specialties after postgraduate studies. A study from New Zealand found the most popular specialties to be medicine, surgery, general practice, paediatrics and obstetrics and gynaecology.¹³

There is a lack of interest in pre- and paraclinical specialties such as biochemistry, physiology and microbiology. In India, this could be due to the lack of opportunities for people trained in these subjects. This also suggests that in future, these specialties could face a shortage of teachers and people with a non-medical background might be the main group of teachers in these subjects.

The most popular choices for men and women in our study were similar to the choice of students in Jordan, where the most preferred subjects among men were surgery and internal medicine and among women these were obstetrics and gynaecology and paediatrics.⁷ Even in the Swiss study, more women preferred obstetrics and gynaecology and paediatrics as compared to men.⁶ In our study, though the proportion of women opting for obstetrics and gynaecology was much higher, it was ranked lower among women's preferences. Unlike in our study, other studies found that women prefer general practice more than men.^{6,14,15}

The most preferred place of work for our students was India followed by the USA. The preference for Malaysia is possibly because 8% of our students were from Malaysia. Most Indian students preferred to work in India akin to students in Pakistan; however, in a study of students in New Zealand, a majority wanted to work overseas.^{10,11} The gender difference in the preference of the place of work could be attributed to the perception that government jobs are more relaxed as compared to private ones and women need to balance their work with home/family commitments.

The factors reported by students that had most influence on their choice of specialties were their own interest in the specialty, followed by perceived job satisfaction, scope of employment in the future and job security. Other studies have shown different factors in different countries including intellectual content or challenge of the specialty.^{7,16,17} A Canadian study showed that medical lifestyle and societal orientation were important factors.⁸ A study in the USA found that one of the most important factors that influenced choice of specialty was a comfortable lifestyle which allowed more time for family life. This was more important than factors such as high income potential, fewer working hours

and years of training.^{14,18} A study in Jordan found 'reputation of specialty', 'anticipated income' and 'focus on urgent care' to be factors that made students decide upon a particular specialty.⁷ Indebtedness, which was thought to be one of the most important factors was not found to be so in a few studies from the USA. However, in our study it had an indirect influence as some of the important factors were related to income potential and job security, i.e. income assurance.^{9,17} In India, it is not surprising that finances play an important role in specialty preference, especially in private medical colleges where fee structures are high.

Most students did not seem to feel the pressure from parents to take up any branch of specialization. This may be due to the fact that as of now they are not yet at that stage when they need to talk about it. It may surface much later when they actually have to make a choice. It may also mark a trend of parents being more open to their children's choices. Other factors that have not been explored in our study but reported by others are the absence of role models, harassment by seniors, direct patient contact and negative role models.^{15,16,19}

Our study has a limitation of covering all students from the first to final year. The preference for a specialty may vary according to the number of years they are exposed to a particular specialty. In addition, we did this study in a private medical college where most students come from the higher income groups. Hence, some of our findings may not reflect the opinion of all medical students, especially those in government colleges. Students in government medical colleges may be more open to working in government or rural set-ups. They also may differ in their choice of subjects, as their preferences may not be influenced by financial considerations.

However, as there is a mushrooming of private medical colleges in India, our study does have relevance. Also, one-third of our students are either on free or minimal payment seats. Nonetheless, more such studies would be needed in both government and private medical colleges to get a more complete picture of students' specialty preferences and factors influencing their choice.

Conclusion

Our study reveals that the most preferred specialties of the students were surgery, internal medicine and paediatrics with gender variations; men preferring surgical specialties and women preferring obstetrics and gynaecology and paediatrics. Factors that had the most influence on their choice were their interest in the specialty, perceived job satisfaction and high income potential. Some specialties such as community medicine, ophthalmology and psychiatry are not favoured and there is a need to improve students' interest in these areas.

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Conflict of Interest. None

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