

## Career preferences and the factors influencing their selection in fourth year medical students in the University of Colombo

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AL 1999 batch of students, Faculty of Medicine, University of Colombo

### Abstract

*Objective:* To identify post intern career preferences and factors influencing their selection in fourth year medical students of the University of Colombo.

*Design and setting:* A descriptive cross sectional study was carried out among 200 fourth year medical students of the AL 99 batch of the Faculty of Medicine, University of Colombo from 20<sup>th</sup> May 2005 to 11<sup>th</sup> July 2005. A self-administered questionnaire was used for data collection. Data analysis was done using Microsoft Excel and SPSS software programs.

*Results:* According to the level of preference scores computed for each career preference, General Medicine, Obstetrics and Gynaecology, General Practice/Family Medicine, General Surgery and Neurology were areas/disciplines with the highest levels of preference among students. Community Medicine, Biochemistry, Geriatrics, Medical Administration and Microbiology had the lowest preference scores. Among factors which influenced the career preferences, personal factors scored the highest percentage score (35.03%), followed by factors within the hospital and clinical appointment (36.33%), occupational factors (29.5%), factors within the medical school (20.84%) and factors associated with family and relatives(7.6%).

*Conclusion:* Contrary to the popular belief that career choices among the medical professionals are made after internship, this study reveals that they may be made within and even before entry to medical school. These choices are influenced by factors both within and outside the faculty.

### Introduction

Medical careers begin by encompassing a broad range of study, ultimately narrowing down to specialization and sub specialization. Relatively little is known about transition from the 'medical

student' who is a relatively undifferentiated, totipotent 'stem doctor' (1), potentially capable of entering any specialty, through to the final, fully-differentiated 'specialist' who is restricted to one specialized area of medicine.

Although medical career specialization has been subjected to a moderate amount of research worldwide, similar studies have not been conducted among medical students in Sri Lanka, which produces 800 – 900 medical graduates per year. Medical education in Sri Lanka requires undergraduates to be exposed to a wide range of medical specialties, and most students will have sampled many areas/disciplines by the final year when they start professorial appointments. During undergraduate training students are exposed to a wide range of relatively balanced learning experiences, which may have an impact on forming their preferences, both for and against certain specialties/healthcare settings. Although it is often assumed that students do not make career choices until and after they have finished medical school, there is strong evidence that career choices can be determined during or even before medical school (2-5).

Career choices among medical professionals involve considering the entire range of careers and then selecting those which they regard as broadly acceptable, making their eventual choices within that subset. An important point highlighted by some studies (2, 6) is that choices tend to be negative, meaning that careers are rejected because they do not have attributes which are consonant with the person making the choice, rather than positively chosen for their special suitability.

Preferences of present day students may reflect ultimate career choices of future medical practitioners, which in turn play an important part in the healthcare sector of a country. The challenge for medical educationists is to understand how these choices are made and design curricula to

influence these choices. Thus, identifying career preferences and factors which influence these will facilitate workforce planning of healthcare services and appropriate changes in undergraduate medical education in Sri Lanka.

### Method

A descriptive cross-sectional study was conducted in the Faculty of Medicine, University of Colombo, during a period of eight weeks (May - July 2005). The study sample consisted of 200 students of the Advanced level (AL) 1999 batch, who had completed the fourth year of their five year undergraduate course. The inclusion criterion was the exposure to all the teaching activities, pre-professional clinical rotations and modules by the time the study was conducted.

Data collection was by a self-administered questionnaire consisting of two main components apart from the variables describing the study population. Part A inquired on career preferences with respect to the area/discipline of interest. Students were requested to state their level of preference for 33 areas/disciplines listed out by the investigators with an option for 'other' preferences. The list of areas/disciplines was decided upon considering the clinical rotations students had been exposed to and the list of specialties obtained from the Post Graduate Institute of Medicine (PGIM). Preferences on teaching, research, setting of work and whether their preference had changed after entering the faculty were also inquired. Part B inquired on factors influencing career preferences. Students indicated the degree to which 34 variables influenced their preferences. These variables were chosen after a literature review and discussions with medical students, doctors and lecturers. The list was given to medical students and pre-interns to check for item appropriateness and comprehensiveness and modified based on their review. The initial version of the questionnaire was pre-tested among the medical students of the AL 1998 batch (early final year students).

Data was analyzed using Microsoft Excel and SPSS software programs. Responses to the level of preference were rated on a five point scale, +2 'the definite choice', +1 'desirable choice', 0 'neutral', -1 'not a desirable choice' to -2 'definitely not a choice'. Responses to the factors were rated on a 3-point scale ranging from 0 'no influence', +1 'some influence' to +2 'strong influence'. Factors were grouped in to five categories as personal

factors, factors associated with family and relatives, factors within the medical school, factors within the hospital and clinical appointment and occupational factors. The total score for each category was calculated and taken as a percentage of the maximum expected score for comparison.

### Results

Response rate was 95.5% (191/200). Among the respondents 60.2% were males and 39.8% were females. The age of participants ranged from 24-31 years. Mean age of the sample was 26.63 years with a standard deviation of 0.841.

Comparison of career preference scores are represented in their descending order in Table 1. According to the scoring system assigned, the five most preferable areas/disciplines were General Medicine, Obstetrics and Gynaecology, General Practice and/or Family Medicine, General Surgery and Neurology. The least preferable were Community Medicine, Biochemistry, Geriatrics, Medical administration and Microbiology. Nine students (4.68%) had indicated their preferences in 'others' category (Cardiothoracic surgery, Medical information technology, Plastic surgery, Sports medicine and Venereology).

A majority of students (60.7%) had decided to specialize once they graduate, while 36.6% were undecided. The percentages of students who had already decided on engaging in teaching and research activities were 54.5% and 40.3% respectively. Equal percentages preferred to work only in Sri Lanka (38.7%) and both in Sri Lanka and abroad (38.7%). Majority (79.1%) preferred to work in both government and private sectors. Most have indicated multiple options including both primary and non-primary healthcare settings and their comparisons are represented in figure 1.

62.3% didn't have a specific career preference at the time of entrance to the faculty. By the end of the fourth year 47.64% had a definite career preference. Of the 37.3% who had a definite career choice at the time of entrance, 56.9% had not changed their preferences.

Only 188 had indicated the degree to which 34 variables influenced their career preferences (table 2). The factors were grouped into five categories and the influence of each was calculated using the scoring system. The total score of each category was taken as a percentage of maximum expected score within each category (figure 2).

*Table 1: Scores of each area /discipline*

Area/ discipline	The definite choice	A desirable choice	Neutral	Not a desirable choice	Definitely not a choice	Total	Score
General Medicine	21	116	34	11	9	191	108
Gynaecology and Obstetrics	15	69	62	20	25	191	14
Other	4	5	0	0	0	9	9
General Practice/ Family Medicine	11	71	53	38	18	191	8
General Surgery	21	74	37	28	31	191	5
Neurology	5	71	62	32	21	191	2
Cardiology	8	61	70	33	19	191	-2
Nephrology	2	49	79	38	23	191	-33
Ophthalmology	4	41	83	36	27	191	-45
Paediatrics	12	53	53	33	40	191	-48
Pulmonology	1	33	99	34	24	191	-48
Gastroenterology	1	42	83	38	27	191	-49
ENT	3	33	87	45	23	191	-55
Rheumatology	2	40	74	50	25	191	-58
Dermatology	2	36	74	48	31	191	-72
Anaesthesia	0	39	71	33	48	191	-90
Orthopaedic surgery	7	38	48	56	42	191	-95
Oncology	1	28	69	62	31	191	-95
Neurosurgery	5	32	56	49	49	191	-110
Pathology	0	34	56	50	51	191	-118
Pharmacology	1	30	63	43	54	191	-120
Genetics	2	36	51	45	57	191	-121
Physiology	0	30	58	48	55	191	-128
Paediatric surgery	3	28	53	52	55	191	-131
Psychiatry	5	25	54	50	57	191	-134
Radiology	0	19	62	57	53	191	-144
Anatomy	2	19	58	53	59	191	-150
Forensic medicine/ toxicology	2	35	36	47	71	191	-152
Parasitology	0	18	60	52	61	191	-156
Microbiology	0	16	63	51	61	191	-157
Medical administration	3	27	43	43	75	191	-163
Geriatrics	0	16	56	56	63	191	-166
Biochemistry	0	7	56	55	73	191	-194
Community Medicine	3	13	24	34	117	191	-252

(The responses to the level of preference were rated on a five point scale, ranging from +2 'the definite choice', +1 'desirable choice', 0 'neutral', -1 'not a desirable choice' to -2 'definitely not a choice'.)

*Table 2: Factors influencing career preferences*

Category of Factors	Factors	No influence		Some influence		Strong influence		Score
		Freq.	%	Freq.	%	Freq.	%	
Personal Factors	Personal preference	9	4.71	48	25.13	131	68.59	310
	Desire to serve mankind	20	10.47	95	49.74	73	38.22	241
	Desire to serve your countrymen	27	14.14	98	51.31	63	32.98	224
	Having had/having a certain illness yourself	138	72.25	39	20.42	11	5.76	61
	Sense of “personal fitness”	53	27.75	84	43.98	51	26.70	186
Factors associated with family and relations	Parental wishes	80	41.88	84	43.98	24	12.57	132
	Having a relative abroad	125	65.45	46	24.08	17	8.90	80
	Having a relative/friend in the same setting/field	149	78.01	33	17.28	6	3.14	45
	Having a relative/friend with a certain illness	143	74.87	38	19.90	7	3.66	52
	Present family income	143	74.87	35	18.32	10	5.24	55
Factors within the Medical School	Interesting lectures/seminars	94	49.21	72	37.70	22	11.52	116
	Student seminars/Problem based learning sessions/Assignments	116	60.73	67	35.08	5	2.62	77
	Laboratory practical sessions	116	60.73	63	32.98	8	4.19	79
	Skills sessions	81	42.41	87	45.55	20	10.47	127
	Successful examinations	52	27.23	91	47.64	45	23.56	181
Factors within the hospital setting/clinical appointments	Enjoying the clinical appointment	30	15.71	85	44.50	73	38.22	231
	Inspiration from role models	57	29.84	80	41.88	51	26.70	182
	Quality of teaching in the wards	45	23.56	100	52.36	43	22.51	186
	Experiences with patients	26	13.61	97	50.79	65	34.03	227
	Opportunity to do procedures	43	22.51	87	45.55	58	30.37	203
	Encouragement by senior doctors	60	31.41	71	37.17	57	29.84	185
	Encouragement by colleagues	76	39.79	81	42.41	31	16.23	143
	Developed an interest in the area	14	7.33	90	47.12	84	43.98	258
Confidence in the area	25	13.09	89	46.60	74	38.74	237	
Occupational factors	Working conditions	54	28.27	98	51.31	36	18.85	170
	Working hours	73	38.22	84	43.98	31	16.23	146
	Diversity of patients	51	26.70	95	49.74	42	21.99	179
	Diversity of activities	48	25.13	99	51.83	41	21.47	181
	Perceived level of stress	71	37.17	78	40.84	39	20.42	156
	Exciting settings	65	34.03	91	47.64	32	16.75	155
	Expected income	69	36.13	83	43.46	36	18.85	155
	Prestige	58	30.37	102	53.40	28	14.66	158
	Job satisfaction	12	6.28	68	35.60	108	56.54	284
	Requirement of medical practitioners in a particular field/ setting	103	53.93	68	35.60	17	8.90	102

Figure 1: Percentages of students who like to work in different health care settings

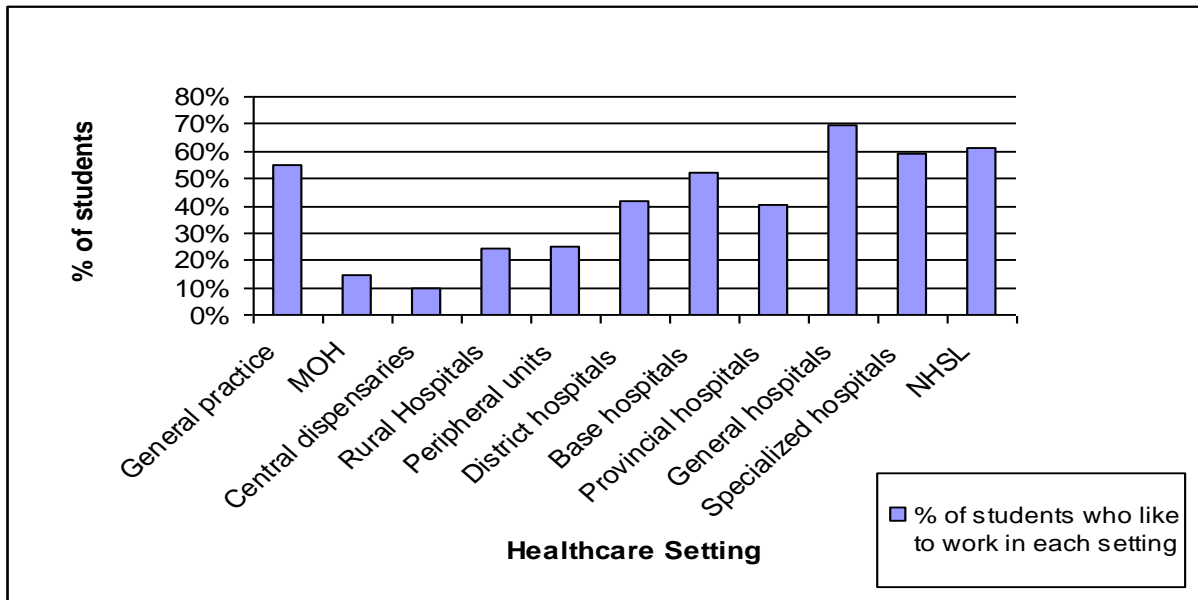
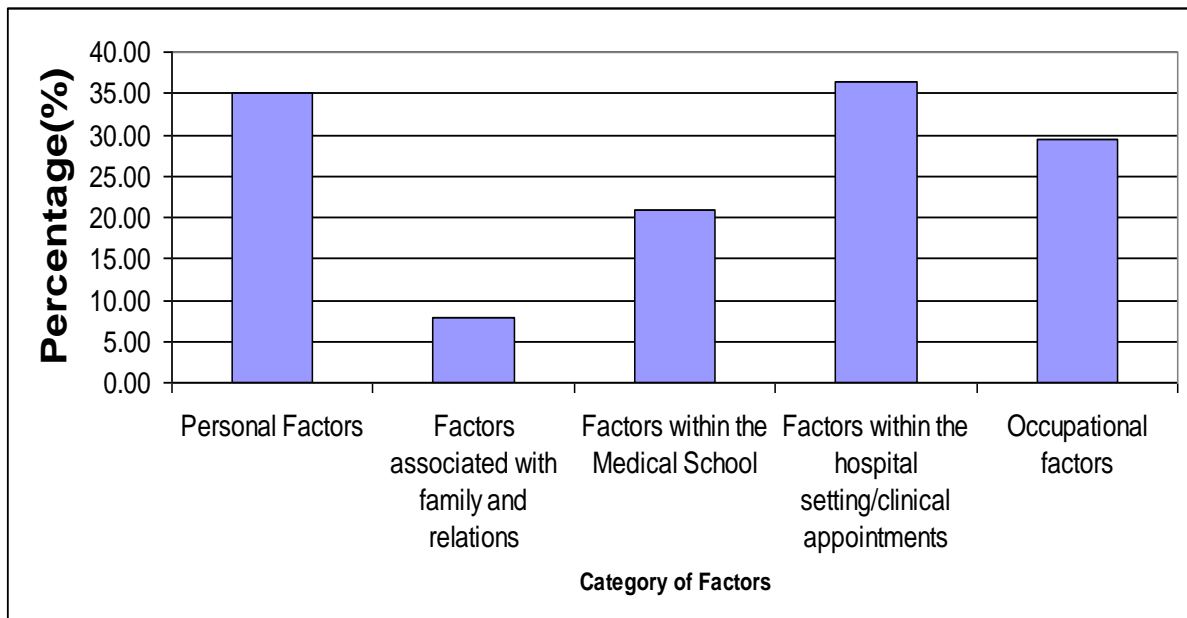


Figure 2: Comparison of scores given to each of the five categories of factors



### Discussion

A descriptive study has its advantages of being cost effective, less time consuming and providing a “snap shot view” of the current situation in general. The response rate of this study was satisfactory at 95.5%. The sex and age distribution was similar to the majority of batches currently undergoing their undergraduate training at the Faculty of Medicine Colombo and the other faculties of medicine in Sri Lanka.

While reflecting the traditional popularity of areas such as General Medicine and General Surgery (7) the results also bring out Obstetrics/Gynaecology, General Practice/Family Medicine and Neurology as highly preferred areas.

In 2002 there were 9290 Medical officers in Sri Lanka (48.9 doctors/ 100 000 population) (8). The majority of the requirement for new doctors in the country is in the primary health sector which also includes a significant proportion of General

Practitioners. The trend reflected in this study is favourable to the government's policy makers, medical workforce experts and all others interested in maintaining and increasing the number of General Practitioners. In contrast, studies done in other countries have triggered concern over the low proportion of medical students with a preference for family medicine (5). Specialties such as Cardiology, Paediatrics, Rheumatology, Nephrology, ENT, Gastroenterology, Ophthalmology, Anaesthesia, Dermatology, Pulmonology, Oncology and Orthopaedic Surgery had relatively moderate preference scores indicating the growing interest in these areas. The fact the students been exposed to these areas during undergraduate training maybe a reason to develop these preferences.

In disciplines with lowest preference scores there were a considerable percentage of students who have excluded these options by marking them as 'definitely not a choice' indicating that students were not considering them as a possibility or backup career. This has serious implications on the requirements in both preventive and curative services. The apparent unpopularity in areas such as geriatrics may be attributed to the fact that many students have not been exposed to such areas. Despite the severe shortage of Psychiatrists working in the government sector in Sri Lanka (8), psychiatry was more towards the unpopular side in this study and studies carried out in other countries have also shown a similar trend (9).

As there is a dearth in specialists, the high level of ambition on specialization (60.7%) is a positive factor indicating the ability to rectify this matter if the policies and practices are made to harness these graduates into areas of specialization according to the needs of the country. As 40.3% of students have indicated an interest in research, if combined with a conducive environment, this will result in more professionals being involved in research. The proportion of students (54.5%) who were willing to be involved in teaching activities is also encouraging as a well motivated and committed staff is one of the key determinants of any successful teaching institute.

The maldistribution of medical officers is an issue of serious concern and this study also shows that the number of students willing to work in primary care settings in the government sector is less. As the trend is continuing in the same direction, serious implications exist for the sustainability of

the present health care system based on access to primary care. As 79.1% opted to work in both government and private sectors, it represents the current practice of the majority of medical professionals. Although the private sector contribution is important, the government sector is already understaffed with unattractive salaries and there are no programs within the government sector for job sharing. These may have negative implications on quality and quantity of services given by doctors in government hospitals. In this sample 6.3% opted to go abroad and 38.7% wanted to work in both settings. Political and economic instability, poor salaries, more lucrative jobs abroad and personal factors are some of the reasons that have made many specialists leave the country in the past resulting in a significant brain drain.

Contrary to the popular belief that students remain undecided regarding the area of preference until they have finished medical school and/or internship, 47.6% had a definite career preference at the end of fourth year. This was in keeping with the findings of studies done in other countries (2-4), which provide strong evidence that career choices can be determined during or even before medical school.

Relatively non-modifiable personal and occupational factors had an influence with regard to students' career preferences. However, there is a marked difference in the percentage scores obtained by factors within the hospital/clinical appointments as opposed to factors within the medical school. This becomes an interesting observation, as the students spend a large number of hours involved in academic activities within the faculty especially during the first three years of training. Medical schools have a great potential to influence students regarding their careers and it appears that this potential is not adequately realized, which is inconsistent with some of the other developing and developed countries (5, 10).

There were a few limitations of this study. The study population included only students from Faculty of Medicine, University of Colombo. The findings would have been representative of the entire island if the students of the parallel batches of all other faculties were also included. Since shifts in career preferences could occur during and after medical school it would have been more informative if this was carried out as a cohort study which would have facilitated a better

understanding of the evolution from 'medical student' to 'specialized doctor'.

In conclusion, reasons why medical students choose their careers were complex. If the factors that influence medical students to choose specific areas/settings as a preferred career choice can be identified accurately, it may then be possible to use this information to develop graduates who will pursue jobs in areas/settings which will match the interests of the country as a whole. This information will be helpful for the experts in medical education and curriculum development in order to develop a medical education system which is responsive and relevant to the needs of the country in terms of the quality and the quantity of medical graduates' produced. This was one of the targets set by the member countries in 2000 to achieve the goals set by the World Health Organization (WHO) for Re-orientation of Medical Education (ROME) in the South East Asian Region (11).

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