

The Timing and Stability of Choice of Medical Specialty Among Malaysian Doctors

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Summary

A total of 356 doctors responded to a survey on the timing and stability of choice of medical specialty. The majority of doctors made their final decision while working as a medical officer. One hundred (48.5%) of the doctors had made an earlier choice as medical students, 63 (30.6%) during their internship and 43 (20.9%) made their final choice while they were medical officers. Working experience in the specialty was the most important factor in determining final choice of specialty. Advice from consultants/seniors, better financial prospects and parental influence were more important for the male doctors while marriage and family considerations were more important for the female doctors in making their final choice.

Key Words: Career choices, Medical specialty, Doctors, Medical students, Malaysia

Introduction

The scene and nature of medical specialisation in Malaysia is continuously changing, especially over recent years. In the past, specialisation meant obtaining postgraduate degrees from abroad, mainly from the United Kingdom. However, medical schools in Malaysia have started four year post-graduate courses in almost all medical specialties. More recently, distance learning programs have been introduced and the doctors can undergo training while working in the major hospitals. However, they are required to attend short intensive courses conducted every few months by the universities. This option has certainly increased the opportunities for doctors to undertake medical specialty training in Malaysia.

The timing and stability of the decision to enter a particular medical specialty are of interest to

medical educators and planners. Markert reviewed 12 studies of changes of medical student specialty preferences and found agreement between early and late choices, on average, 39% of the time¹. He also reported considerable variability in agreement from one specialty to another. Another study of 10,000 medical school graduates reported only 20% agreement between specialty preferences during the junior year of college and the senior year of medical school². A number of studies have looked into career choices of medical students in Malaysia. They were mostly done on final year medical students but stability of their choice was not followed up. In Malaysia, only between 12 to 45% of the final year medical students have actually decided on a medical specialty to pursue^{3,4,5}. It would seem that for the majority of doctors, the final choice is made only after graduation. Various factors at play during this period will influence that choice.

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This study attempts to look at the experience of Malaysian doctors who have applied to pursue a medical specialty at one of the local universities in 1995 and 1996, on the timing and stability of their decision on their chosen medical specialty.

Materials and Methods

In Malaysia, the doctors will have to apply formally to the Central Processing Unit, Ministry of Education Malaysia to pursue medical specialty training at one of the local universities. The list of the applicants who applied to pursue a specialty course at one of the local universities in 1995 and 1996 was requested and obtained from the Division of Higher Education, Ministry of Education Malaysia for our study. There were a total of 403 applications in 1995 and 549 applications in 1996 applying for one of the medical specialties offered.

Two hundred and fifty doctors were chosen using proportionate random sampling by medical specialty for each year and by gender giving a total of 500 doctors. A structured questionnaire was sent to these selected doctors after the deadline for receiving the applications in 1995 and 1996. The questionnaire included questions on their choices of medical specialty, personal particulars, timing and factors affecting their decisions. The stability of the doctor's choices was examined by asking whether they have had any previous choices of medical specialty. A list of possible reasons were given to assess the importance of each reason in their decision to change their choice of specialty. A Likert scale of 1 to 6 was given to assess the importance of each factor, where 1 = very unimportant, 2 = moderately unimportant, 3 = mildly unimportant, 4 = mildly important, 5 = moderately important and 6 = very important.

A total of 356 doctors (males-169, females-187) responded to the survey, giving an overall response rate of 71%. The response rate by gender was 68% for males and 75% for females.

However, the response rate from each specialty ranges from 91.6% for otorhinolaryngology to 57.1% for anesthesiology. The data for each year was pooled and analysed. The score on factors influencing the change of decision was analysed by gender and compared statistically using the chi square test with the level of significance set at $p < 0.05$.

Results

Profile of Medical Specialty Training Applicants

There were a total of 952 doctors in 1995 and 1996 who applied to pursue a medical specialty course. There were 477 male and 475 female doctors. The age range was from 24 to 44 years with 68% of them aged 27 - 30 years. The mean age of male applicants was 29.6 years while the mean age of the female applicants was 29.8 years. The working experience as a doctor ranges from 1 year to 17 years. Most of the applicants were married (males - 58.2%, females - 60.9%) at the time of applying.

Timing of decision

The timing of the doctor's decision to enter a particular specialty was examined. Approximately 15.2% of the doctors decided on their eventual medical specialty by the end of their medical school. By end of their internship, another 17.7% had made their decision while the remaining 67.1% only made their final decision when they were medical officers (Table I).

When analysed by discipline, most of the choice for specialties were made during the post-internship period. A higher proportion of the choices were made during the post-internship period for specialties like anaesthesiology, otorhinolaryngology, pathology, family medicine and public health. Surprisingly, nearly half of the doctors who decided to pursue psychiatry made that decision when they were in medical school.

Table I
Timing of Final Decision by Speciality among Malaysian Doctors 1995-1996

Speciality	As Medical Students	As Interns	As Medical Officers	Total
Internal Medicine	9 (14.1)	9 (14.1)	46 (71.9)	64
Surgery	9 (25.7)	8 (22.9)	18 (51.4)	35
Paediatrics	3 (11.1)	7 (25.9)	17 (63.0)	27
O&G	7 (16.7)	15 (35.7)	20 (47.6)	42
Anaesthesiology	1 (4.2)	3 (12.5)	20 (83.3)	24
Ophthalmology	4 (17.4)	5 (21.7)	14 (60.9)	23
Orthopaedic Surgery	4 (13.8)	5 (17.2)	20 (69.0)	29
Otorhinolaryngology	2 (18.2)	0 (0.0)	9 (81.8)	11
Pathology	1 (5.8)	1 (5.9)	15 (88.2)	17
Family Medicine	4 (11.1)	2 (5.6)	30 (83.3)	36
Psychiatry	6 (42.9)	1 (7.1)	7 (50.0)	14
Radiology	3 (13.0)	6 (26.1)	14 (60.9)	23
Public Health	1 (9.0)	1 (9.1)	9 (81.8)	11
Total	54 (15.2)	63 (17.7)	239 (67.1)	356

Table II
Factors Influencing the Change of Decision of Doctors 1995-1996

Factors	Mean Score		Total
	Male	Female	
1. work experience in the speciality	5.26	5.21	5.33
2. marriage and family considerations	3.94	4.42*	4.22
3. availability of local courses	3.89	3.70	3.79
4. advice of consultants/seniors	4.07	3.47*	3.73
5. ability to stay near home	3.19	3.17	3.18
6. better financial prospects	3.40	2.78*	3.08
7. parental influence	2.92	2.32*	2.59

* $p < 0.05$

Stability of speciality choices

Eighty-eight (52.1%) male doctors and 118 (63.1%) of the female doctors had made a different earlier choice. One hundred (48.5%) of the physician had made the earlier choice during medical school, 63 (30.6%) during the internship period while 43 (20.9%) had made it while they

were already medical officers. The score for various factors which may influence them to change their decision are shown in Table II.

A total of 141 (39.6%) doctors would have made a different choice if they have been of the opposite gender. These included 56 (33.1%) of the male doctors and 85 (45.5%) of the female

Table III
Specialty Choice of Doctors if They Were of the Opposite Gender 1995-1996

Specialty	Male	Female	Total
1. Anaesthesiology	1	3	4
2. Internal Medicine	6	17	23
3. Otorhinolaryngology	1	0	1
4. Ophthalmology	2	1	3
5. Paediatrics	10	6	16
6. O&G	7	9	16
7. Orthopaedics	3	10	13
8. Pathology	3	0	3
9. Surgery	2	27	29
10. Radiology	8	0	8
11. Public Health	3	1	4
12. Family Medicine	2	0	2
13. No response	8	11	19
Total	56	85	141

doctors. The specialty of choice if they had been of the opposite sex are listed in Table III. No specialty of choice was listed for 19 doctors who agreed that their choice would be different if they were of the opposite gender. Surgery, internal medicine, paediatrics and Obstetrics & Gynaecology (O&G) are specialties where there were the most frequent changes of choice related to gender.

Discussion

Only 15.2% of the doctors studied were able to identify their ultimate specialty choices during medical school. This figure is similar to other studies done on career choices of medical students^{3,4,6}. The majority (67.1%) of the respondents made their final specialty choice when they were medical officers. The final decision made during medical school varies with different specialty, being highest for psychiatry (42.9%) followed by surgery (25.7%). The lowest was for pathology (5.8%). Zeldow et

al noted that specialty choices that seemed to be the most powerfully influenced by the clinical clerkship experience during medical school were paediatrics, psychiatry and to a lesser extent, surgery⁷. Other studies have claimed that interest in surgery and psychiatry were already present prior to entering medical school⁸. This may account for the relative stability of choice by medical students to pursue psychiatry. However, this finding will need further investigation.

During the medical officer period, more than 80% of the final decision was made for specialties such as anaesthesiology, otorhinolaryngology, pathology, family medicine and public health. This trend is not surprising as anaesthesiology and otorhinolaryngology are minor clinical specialties with limited exposures during medical school for it to have an impact on the students. Pathology is mainly taught during the pre-clinical years and is often perceived as a non-clinical specialty. Family Medicine is a new specialty in Malaysia and medical students, especially from the local universities, were not adequately exposed to this specialty. The lack of role models for family medicine specialist in the Malaysian public health services may also contribute to the late choice of this specialty. The vocation of public health is not realised and explored during medical school and the first experience in this specialty would be during the medical officer period when the young doctors would be posted to the rural health clinics. All these specialties are also considered as 'soft' specialties and is perceived as suitable for female doctors, especially those with family commitments. We have reported in an earlier paper on the same study group, that more female doctors opted for family medicine, public health, pathology, anaesthesiology and paediatrics⁹ as a final choice in their post graduate training application when compared to their male counterparts.

This is an important observation as most of the female doctors (60.9%) were married at the time of application.

A substantial number of the doctors had made an earlier choice of speciality during their medical school or internship years. It has been acknowledged that between 10% and 20% of final specialty choices of medical students will be changed within 10 years of graduation from the medical school^{10,11}. In a study of United Kingdom medical graduates, experience as students and the influence of lecturers and departments were relatively unimportant¹². This UK study noted that only a small proportion of specialty choices (15.2%) were decided during medical school. Thus we share the same conclusion with other studies showing that specialty choices made by medical students are highly unreliable predictors of future choices^{13,14}. In this study, as high as 20% of the doctors changed their choice during the medical officer period itself.

'Working experience in the specialty' was the most important reason for the change in choice of specialty. Working experience has been noted to enhance the knowledge and develop further the skills in that specialty in particular. In addition, role modeling by specialists and senior colleagues will reinforce interest in that specialty. Among the other important reasons were 'marriage and family considerations', 'the availability of local courses' and 'advice by consultants or seniors'. 'Parental influence' was the least important. As the majority of the applicants were already married, the prospect of family commitments and responsibility becomes a reality. This factor was significantly more important for the female than male respondents in our study. Uhlenberg noted that this factor was stronger among females under the age of 40, probably reflecting the difficulty that many female doctors encounter in combining work with care of their young children¹⁵. The male doctors were also more concerned about 'better financial prospects' causing them to change their decision compared to the female doctors. Other factors which were different were 'parental influence' which was more significant in the males. This is perhaps true in the Malaysian context, where the female spouse normally consults her husband, while for the male doctor,

parental influence plays a more important role. Again, 'advice from consultants/seniors' is much more important for the male doctors.

It was interesting to note that 39.6% of the doctors would have chosen another specialty if they had been of the opposite sex. Gender seems to be an important consideration when making the final choice of specialty. Obviously, this factor was more important for the female physician, constituting 60.3% of those who would have made an alternative choice in this study. The actual speciality choices of male and female doctors have been elaborated in a previous publication on the same study population and will therefore not be discussed in detail here. Suffice to note that the study found that the three most popular speciality choices of male doctors were surgery, orthopaedic surgery and internal medicine in that order while the three most popular choices for the female doctors were family medicine, public health and pathology⁹. This study somewhat reaffirmed the earlier findings from another perspective. It was interesting to find that the three top responses for the male doctors if they were female were paediatrics, O&G and radiology. The top 3 choices for the female doctors if they were males were surgery, medicine and orthopaedic surgery. Paediatrics and O&G are known to be preferred choices for female doctors because of their natural inclination towards the birthing process and maternal instincts^{16,17}. The choice of O&G in this context may also be due to social and religious ideals that female patients should be managed by female doctors⁶. The choice of radiology is rather puzzling other than it being perceived as a light posting and suitable for female doctors with family commitments. Reproductive hazards have been shown to be higher among females working in the radiology unit. Surgery, internal medicine and orthopaedic surgery were the top choices for the female doctors had they been male. The choice of the surgical specialties are expected choices as males are said to be attracted to working with instruments and managing dramatic situations¹⁸.

Internal medicine, while deemed to be a popular choice for the female doctors, involves heavy clinical responsibilities and working after hours, and this will deter a number of female doctors from opting for this choice.

The importance of making a correct specialty choice is enhanced by the fact that in most cases the choice is practically irreversible and doctors cannot shift from one specialty to another without loss of expertise, recognition or income. In Malaysia, there is a drive to promote specialisation in medicine to improve the health care services. There are also more job opportunities and better financial prospects for medical specialists joining the private health care sector. The opportunities to become a specialist will increase with the introduction of distance learning programs where a greater number of doctors can be taken into the program. It is thus important for health care planners to be aware of factors affecting choice of specialty so that the problem of oversupply and inadequacy of

manpower in the various medical specialties, which currently exist, can be avoided. Factors like 'working experience in the specialty' and 'advice from specialists and seniors' which were noted in this study to be of significant importance in determining final specialty choices of doctors, could be fully explored and utilised by health care planners in Malaysia to provide a match between individual career aspirations and the medical manpower needs of the country.

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References

1. Markert RJ. Change in specialty choice during medical school. *J Fam Pract* 1983; 17: 295-300.
2. Babbott D, Baldwin DC, Jolly P *et al*. The stability of early specialty preferences among US medical school graduates in 1983. *JAMA* 1988; 259: 1970-75.
3. Deva MP. Career choices of Malaysian medical students. *Med J Mal* 1981; 36: 188-92.
4. Shahabuddin SH. Career choices of final year female medical students at Universiti Kebangsaan Malaysia (UKM). *Med J Mal* 1986; 41: 327-30.
5. Zulkifli A, Rogayah J. Career preferences of medical students of Universiti Sains Malaysia *Mal J Med Sc* 1996; 3: 58-61.
6. Zulkifli A, Rogayah J. Career preferences of male and female medical students in Malaysia. *Med J Mal* 1997; 52: 1-6.
7. Zeldow PB, Preston RC, Daugherty SR. The decision to enter a medical specialty: timing and stability. *Med Educ* 1992; 26: 327-32.
8. Geertsma RH, Grinos DR. Specialty choice in medicine. *J Med Educ* 1972; 47: 509-17.
9. Zulkifli A, Rogayah J. Speciality Choices of Male and Female Doctors, *Med J Mal* 1998; 53: 327-33.
10. Tardiff K, Cella D, Seiferth C. Selection and change of specialties by medical school graduates. *J Med Educ* 1986; 61: 790-5.
11. Jennet P, Kishinevsky M, Bryant M *et al*. Major changes in medical careers following medical school graduation: when, how often and why? *Academic Medicine* 1990; 65: 48-9.

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12. Lambert TW, Goldacre MJ, Prakhouse J *et al*. Career destinations in 1994 of United Kingdom medical graduates of 1983: results of a questionnaire survey. *BMJ* 1996; 3: 2893-7.
13. Held ML, Zimet CN. A longitudinal study of medical specialty choice and certainty level. *J Med Educ* 1975; 50: 1044-50.
14. Davis WK, Bouhuijs PA, Dauphinee WD *et al*. Medical career choice: current status of research literature. *Teaching and Learning in Medicine* 1990; 2: 130-38.
15. Uhlenberg P, Cooney TM. Male and female doctors: Family and career patterns *Soc Sc Med* 1990; 30: 373-8.
16. Jaafar R, Ahmad Z. Career preferences of medical students in a community-oriented medical school. *Annals of Community-Oriented Education* 1993; 6: 301-10.
17. Razali SM. Medical school entrance and career plans of Malaysian medical students. *Med Educ* 1996; 30: 418-23.
18. Meir EI, Engel K. Interests and specialty choice in medicine. *Soc Sc Med* 1986; 23: 529-30.