FUTURE SPECIALTY AND PRACTICE INTENTIONS AMONG SAUDI MEDICAL STUDENTS

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Objective: The objective of the study is the identification of the specialty intentions, the reason behind that choice and the preferred practice location of the study population.

Methodology: A cross sectional study was conducted using a self-administered questionnaire distributed at the end of the academic year 1994. One hundred and forty nine (149) male and 104 female graduating medical students were surveyed.

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medical students representing the four medical colleges in Saudi Arabia were included.  

Results: The four major clinical specialties were selected by more than half of the students; Internal Medicine (17%), Surgery (16%), Paediatrics (14%) and Obstetrics (11%). Twenty seven percent were not sure of their future career choice. Primary health care was chosen by only 1.6% of the students. More men chose Surgery but more women chose Obstetrics and Ophthalmology.  

Discussion: “Financial incentives”, “no night duties”, “social reasons” and “less responsibilities” were the less frequently mentioned reasons for career choice. The qualifications in view were mostly Canadian Board for 49% of the students and Arab Board for 48% of them. The most frequently preferred locations for postgraduate training were Saudi Arabia (56%) and Canada (40%). The majority intended to practice in hospitals (90%) and in cities (85%).  

Conclusion: The current drastic deficiency of trained Saudi Family Physicians will continue unless targeted strategies to produce more generalists are undertaken.  

Key Words: Specialty choice, Practice location, Medical students, Saudi Arabia.

INTRODUCTION

Currently, there are four medical colleges in Saudi Arabia - the first opened in 1969. The total number of Saudi doctors (3869) in Saudi Arabia represent 16.4% of the total physicians manpower. In the Ministry of Health (MOH), the proportions of Saudi doctors working in health centres (5.8%) is lower than that in hospitals (16.9%). Efforts to increase the number of Saudi physicians in primary health care (PHC) and other unpopular specialties require an adequate understanding of how medical students choose their career.

A survey of first three graduate classes of King Abdulaziz University (KAAU) - College of Medicine indicated the tendency of men to practice in Medicine, Surgery, Dermatology, Urology, ENT, Ophthalmology and Orthopaedics while women concentrated on Obstetrics and Gynaecology and Paediatrics. Men were found to earn their postgraduate certificates outside Saudi Arabia while most women earned theirs in Saudi Arabia. A survey of fourth and fifth (final) years medical students at King Saud University (KSU) had shown that the majority intended to specialize and subsequently practice in the major disciplines of medicine, surgery, paediatrics and obstetrics; only a few (3.5%) chose primary care and none chose pathology or anaesthesia.

Each of the previous studies in Saudi Arabia was limited to one university. Moreover, the study in KSU was conducted on students who were not exposed to all clinical clerkships (specialties).

The purpose of this study was to obtain information on career preference, intended practice location, and reasons for career choice from graduating medical students of all the four Saudi medical colleges.
METHODOLOGY

A self-administered questionnaire was filled out by 149 male and 104 female final year students of the four Saudi medical colleges.

The Questionnaire

It was based on the questionnaire used in the Jarallah et al study with some modifications. It included age, sex, specialty choice, reasons for the choice, preferred place of training and practice, qualification and the intention to work full-time or part-time.

Data Collection

The questionnaires were distributed during the last two weeks of the academic year 1994, just before or at the time of the final certifying examination. The number of students surveyed and the response rate are shown below:

| College            | Target population | No of respondents | Response rate (%) |
|--------------------|-------------------|-------------------|-------------------|
| 1. KFU             |                   |                   |                   |
| Male               | 53                | 51                | 96                |
| Female             | 39                | 38                | 97                |
| 2. KSU             |                   |                   |                   |
| Male               | 54                | 51                | 94                |
| Female             | 38                | 36                | 95                |
| 3. KAAU            |                   |                   |                   |
| Male               | 55                | 27                | 49                |
| Female             | 40                | 31                | 78                |
| 4. Abha branch of KSU |                   |                   |                   |
| All males          | 22                | 19                | 86.4              |

KFU = King Faisal University

Data Analysis and Statistics

The data were entered into the data star and analysed using systat statistical programmes. Chi-square statistical test was used to determine the statistical significance of association between categorical variables at a P value of 5%. It was discovered that some questions were not accurately answered. For this reason and to increase accuracy, it was decided to revise all the answers manually, this was to be done by two of the authors (MMB, EAF). For example, in the question about the training specialty under consideration, although students were requested to choose only one specialty, some chose more than one. This group of students was added to the category "Not decided yet".

RESULTS

Of the questionnaires distributed, 253 (83.8%) were completed. The response rate was high in all the colleges except KAAU which was low (59%). The researcher in KAAU became sick at the time of study, therefore his substitute distributed the questionnaires late, during the last examination day. The mean age of the respondents was 24.7 ± 1.3 years ranging between 22 and 30 years. There were 149 (58.9%) men and 104 (41.1%) women. The most frequently chosen specialty was Internal Medicine for 17.4% of the students, followed by Surgery (16.2%), Paediatrics (14.2%) and Obstetrics and Gynaecology (10.7%) (Table 1). It is noteworthy that a large proportion (26.5%) of the students had not decided their future career at the time of the study. While primary health care was chosen by only four students (1.6%) and Community Medicine by two, anaesthesia and the basic sciences were not chosen by any of the students. The order of specialty preference among men was General Surgery (21.5%), Internal Medicine (18.8%), and Paediatrics (14.7%), however, the specialties popular with women were Obstetrics and Gynaecology (20.2%), Internal Medicine (15.4%) and Paediatrics (13.5%) in that order. A statistically significant higher
### Table 1: Choice of future specialty by sex by 253 final year medical students of all medical colleges in Saudi Arabia.

| Specialty                  | Males No (%) | Females No (%) | Total No (%) | P value |
|----------------------------|--------------|----------------|--------------|---------|
| Internal Medicine          | 28 (18.8)    | 16 (15.4)      | 44 (17.4)    | 0.592   |
| General Surgery            | 32 (21.5)    | 9 (8.7)        | 41 (16.2)    | 0.010*  |
| Paediatrics                | 22 (14.7)    | 14 (13.5)      | 36 (14.2)    | 0.913   |
| Obstetrics/Gynaecology     | 6 (4.0)      | 21 (20.2)      | 27 (10.7)    | 0.000*  |
| Ophthalmology              | 2 (1.3)      | 7 (6.73)       | 9 (3.6)      | 0.034*  |
| ENT                        | 3 (2.0)      | 5 (4.81)       | 8 (3.2)      | 0.279   |
| Psychiatry                 | 3 (2.0)      | 2 (1.92)       | 5 (2.0)      | 1.00    |
| Primary Health Care        | 3 (2.0)      | 1 (0.96)       | 4 (1.6)      | 0.64    |
| Dermatology                | 1 (0.07)     | 2 (1.92)       | 3 (1.2)      | 0.57    |
| Radiology                  | 2 (1.3)      | 0              | 2 (0.8)      | 0.513   |
| Community Medicine         | 2 (1.3)      | 0              | 2 (0.8)      | 0.51    |
| Others                     | 4 (2.7)      | 1 (0.96)       | 5 (2.0)      | 0.651   |
| Not decided yet            | 41 (27.5)    | 26 (25.0)      | 67 (26.5)    | 0.762   |

Total 149 104 253

N.B.: No student chose Anaesthesia or Basic Sciences. * Statistically significant.

### Table 2: Reasons for choice of specialty by sex.

| Reasons                              | Males (108) No (%) | Females (78) No (%) | Total (186) No (%) | P value |
|--------------------------------------|--------------------|---------------------|--------------------|---------|
| Personal Interest                    | 92 (85.2)          | 63 (80.0)           | 155 (83.3)         | 0.95    |
| A chance to help people              | 79 (73.1)          | 51 (65.4)           | 130 (70.0)         | 0.620   |
| Availability of Postgraduate training| 59 (54.6)          | 27 (34.6)           | 86 (46.2)          | 0.034*  |
| Few specialists                      | 44 (40.7)          | 22 (28.2)           | 66 (35.5)          | 0.177   |
| Prestige                             | 39 (36.1)          | 10 (12.8)           | 49 (26.3)          | 0.002*  |
| Financial incentives                 | 16 (14.8)          | 2 (2.6)             | 18 (9.6)           | 0.015*  |
| No night duties                      | 7 (6.5)            | 10 (12.8)           | 17 (9.1)           | 0.194   |
| Easy subject                         | 10 (9.3)           | 6 (7.7)             | 16 (8.6)           | 0.967   |
| No clear reason                      | 10 (9.3)           | 6 (7.7)             | 16 (8.6)           | 0.967   |
| Social reasons                       | 4 (3.9)            | 4 (5.1)             | 8 (4.3)            | 0.877   |
| Less responsibilities                | 2 (1.9)            | 3 (3.8)             | 5 (2.7)            | 0.683   |
| Other reasons                        | 8 (7.4)            | 9 (11.5)            | 17 (9.1)           | 0.440   |

N.B. 67 students (41 male and 26 female students) did not decide yet and were not included in the analysis of this table. * Statistically significant.

### Table 3: Intended training location preference by sex of 253 final year medical students of all medical colleges in Saudi Arabia.

| Location             | Male (149) No (%) | Female (104) No (%) | Total (253) No (%) | P value |
|----------------------|-------------------|---------------------|--------------------|---------|
| Saudi Arabia         | 76 (51.0)         | 66 (63.5)           | 142 (56.1)         | 0.066   |
| Canada               | 60 (40.3)         | 40 (38.5)           | 100 (39.5)         | 0.874   |
| U.S.A                | 63 (42.3)         | 23 (22.1)           | 86 (34.0)          | 0.001*  |
| U.K.                 | 24 (16.1)         | 11 (10.6)           | 35 (13.8)          | 0.285   |
| Other European       | 7 (4.7)           | 7 (6.7)             | 14 (5.5)           | 0.677   |
| Others               | 3 (2.0)           | 6 (5.8)             | 9 (3.5)            | 0.214   |

The student may have chosen more than one training location. * Statistically significant.
Table 4: Preference of location of future work for the different specialties.

| Specialty                  | Total No | Tertiary Hospital No (%) | General Hospital No (%) | Others' No (%) |
|----------------------------|----------|--------------------------|-------------------------|---------------|
|                            |          | P=0.128                  | P=0.101                 | P=0.0002      |
| Internal Medicine          | 44       | 23 (52.2)                | 18 (40.9)               | 4 (9.1)       |
| General Surgery            | 41       | 25 (61.0)                | 14 (34.1)               | 3 (7.3)       |
| Paediatrics                | 36       | 15 (41.6)                | 19 (52.8)               | 2 (5.6)       |
| Obstetrics/Gynaecology     | 27       | 14 (51.8)                | 9 (33.3)                | 3 (11.1)      |
| Subspecialty in Medicine   | 10       | 7 (70.0)                 | 1 (10.0)                | 3 (30.0)      |
| Subspecialty in Surgery    | 18       | 8 (44.4)                 | 8 (44.4)                | 1 (5.5)       |
| Other (CM + PHC)           | 10       | 2 (20.0)                 | 2 (20.0)                | 6 (60.0)      |
| Not decided yet            | 67       | 26 (38.8)                | 34 (50.7)               | 9 (13.4)      |
| Total                      | 253      | 120                      | 105                     | 31            |

* Health centres or private practice. CM = Community Medicine

The leading reasons for selecting a specialty were “personal interest” for 83.3%, “a chance to help people” for 70%, “availability of postgraduate training” for 46.2%, “few specialists in the country” for 35.5%, and “prestige” for 26.3%.

The order of aspirations for graduate training was Canadian Board for 49% of the students, Arab Board for 48%, American Board for 36%, Saudi qualifications for 28% and the Royal College of UK for 23% of the students. Regarding the intended practice location; the majority (85%) prefer to practice in cities; 83.7% of the males and 86.7% of the females; but the difference between the two sexes is not statistically significant. The proportion of students who preferred to work in cities rather than in towns or villages in different specialties ranged between 72% and 100%; the exceptions were obstetrics (67%) and community medicine and Primary Health Care (40%).

Around 90% of the students had the intention of practicing either in a specialized (tertiary) or general (secondary) hospital and only few preferred health centres or private practice (Table 4). There was no statistically significant difference between male and female students in their preference of any of these practice locations. Regarding the whole group of students there was no statistically significant difference between the specialties in their preference of tertiary (P=0.128) or general hospitals (P=0.101) while the difference was significant for other practices (P=0.0002) as shown in Table 4. Around 63% of the women and 39% of the men preferred part-time
practice, the difference was statistically significant (P=0.0002).

DISCUSSION

The study represents all medical colleges of the Kingdom. As clinical clerkships may significantly influence students' choices of specialty training and practice, only graduating medical students who were exposed to all the clinical and non-clinical departments were included in the study. The present study has several limitations that deserve consideration. First, students could not be convinced to stick to one career choice when filling out the questionnaire. Second, a multivariate analysis of factors that may contribute to different specialty choices especially, Family Medicine could not be performed because of the small number of students in the study, and those who chose Family Medicine.

More than half of the students chose one of the four major hospital disciplines viz. Medicine, Surgery, Paediatrics or Obstetrics/Gynaecology. These specialties have a large share in the undergraduate curriculum. The finding that no student chose to specialize in the 'services' specialties of Anaesthesiology or Basic Sciences, and that a small proportion (1.6%) selected primary health care imply that such specialties in Saudi Arabia will have to rely on imported manpower for a long period. Family Medicine clerkship lasts for six weeks in KSU while it had either none or minimal teaching in the other Saudi universities. Previous studies have repeatedly shown that there is correlation between the allocated time to Family Medicine in medical school curricula and the higher proportions of graduates in Family Medicine. Whether the absence of Family Medicine from the curricula of some universities and the short period in KSU had contributed to being less popular among students needs further exploration. Controversy exists regarding the influence of medical school on medical students future career. While some believe that a medical school environment and curriculum that nurture generalist approach will produce more generalists, others assert that they have no significant effect on career choice. The popularity of Obstetrics among women and Surgery among men is consistent with the findings of previous surveys in Saudi Arabia and other countries.

The specialty preference by medical students is a complex decision process affected by a combination of demographic, attitudinal, social influence and income expectation variables. When students were asked about the reasons for their career choice, "personal interest" and social values such as factors related to "helping others" and "social responsibility" were the most frequently admitted reasons. This is consistent with the findings of other studies. More male than female students laid emphasis on "financial incentives", "prestige" and "availability of postgraduate training" as reasons for their career choice. This finding is consistent with other studies. Women were described as being more conscious of specialties that have a negative impact on their social life; they admitted "social reasons" and "absence of night duties" more frequently though the difference is not statistically significant (P=0.877 and 0.194 respectively). Women had, however, preferred part-time jobs (63%) significantly more frequently than men (39%). As married female doctors may have difficulty coping with job and family commitments, giving them the chance to work part-time may satisfy their wishes in addition to responding to the uneven patient attendance rate to the health facility. While studies elsewhere found monetary considerations to influence on medical students' choice, it is interesting to note that it had little influence in the current study.
This study had shown a great preference for practice at large specialized hospitals in large cities in the four major disciplines. Indeed, this finding was not far from the real situation. In 1990, specialized doctors represented 41.1% of the total number of doctors (18,917) working in the Kingdom; 83% of them were practising in urban areas and only 17% in rural areas. Figures from the Ministry of Health in 1985 showed an almost 100% concentration of Saudi doctors in urban areas. The physician-population ratio, for the year 1994, was 1:680. If there is a maldistribution among different specialties or practice locations (urban/rural) then the ratio as an index of the delivery of general health care looks better than it actually is. The Primary Health Care (PHC) approach is the most acceptable method of improving the physician-population ratio. Properly trained primary care physicians can help meet the primary care needs of the population, especially in rural, bedouin, and inner-city areas. They can deliver high-quality care, and enhance the preventive and curative services to patients. Saudi physicians are the most suitable family physicians in this country. There are 1963 Saudi physicians working in the MOH, only 13% of them are based in health centres. They have a better understanding of the local peoples' habits and ways of thinking (cultural background). Expatriate doctors may have communication and language barriers; they are often transient, making their training not worthwhile and affecting the quality and continuity of care. This indicates that there is a need to attract Saudi physicians to the specialty of Family Medicine through different approaches.

All the Saudi medical colleges should include Family Medicine in their curricula as it was shown that colleges that provided exposure to a Family Medicine experience had larger proportions of students who chose Family Medicine. The current policy adopted recently by the Ministry of Health of acquiring graduating doctors to spend one year in PHC before specialising in other fields may help to attract more doctors to choose it as a career. The establishment of many postgraduate training programmes in the field of Family Medicine in Saudi Arabia would certainly attract some graduates. In one study, students who entered medical school with an interest in Family Medicine were found three times as likely to choose Family Practice as a career than others (P<0.001).

The use of this indicator and possibly others in the selection admission examination of the medical colleges could be useful to direct more graduates to certain specialties.

It was reassuring to note that Saudi Arabia is the most popular training location and it is gratifying many postgraduate training programmes are available in different parts of the country. The larger proportion of men who intended to have their training outside Saudi Arabia, especially in the USA, is probably due to their having greater freedom being socially acceptable to men. Saudi Arabian colleges of medicine and large hospitals are known to have teachers and doctors who have different training and practice backgrounds. The recent trend of training young Saudi doctors in Canada was reflected in the study in that it had become more popular in the eyes of medical students. This finding suggests that role models influence not only specialty choice but also the training location.

It is concluded that the pattern of career choice of medical students in the Kingdom of Saudi Arabia is not different from previous studies in Saudi Arabia and some other countries, where the four major clinical specialties are preferred. The challenges of the extreme shortage of Saudi Medical doctors (especially in the field of primary health care) and their unbalanced distribution, require targeted strategies to produce more primary care specialists and...
other rarely chosen specialties. These strategies should be based on studies to determine factors that influence and modify medical students career choice. Although logistically difficult, the same methods applied towards the end of internship is expected to have a better yield. It is hoped that the newly legislated Saudi Council for Health Specialties will act in that direction to implement appropriate strategies.

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