

Recent Trend in Specialty Choices of Medical Students and House Officers from Public Sector Medical Universities, Karachi

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Abstract

Objective: To determine career choices of medical students of public-sector medical universities and factors affecting their career choices.

Methods: The cross-sectional study was conducted at Dow University of Health Sciences and Jinnah Sindh Medical University, Karachi, from May 2015 to May 2016, and comprised 4th and 5th year medical students and house officers. A self-administrated structured questionnaire was used to collect data which was entered and analysed using SPSS 20.

Results: Of the 445 Subjects, 314(70.6%) were females. There were 206(46.3%) 4th year students, 194(43.6%) were from the 5th year and 45(10%) were house officers. Top 15 medical specialties were ranked according to the respondents' top three choices. Internal medicine 67(15.1%), cardiology 47(10.6%), paediatrics 46(10.3%) and general surgery 40(9.0%) were the four highest ranked specialties. Overall, 377(84.7%) subjects said prestige in working in that field was the reason of their respective choices.

Conclusion: Medical students chose a wider range of specialties and stated varying factors affecting their choices.

Keywords: Career choice, House officers, Medical students, Pakistan, Specialty factors.

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Introduction

Many countries around the world are experiencing a dearth of doctors, especially in the developing countries.¹ Lack of physicians poses a serious threat to the provision of primary healthcare facilities in vulnerable societies.¹ There is a decreasing trend of medical students entering primary care residencies and the physicians going into family practice. The need for primary care provider is going to increase because medical students still give preference to hospital-related specialties. In the United States, the dearth of primary care providers is expected to increase to 45,400 by 2020.² Only one-third of medical students in Canada are interested in family medicine.³ Many types of research have explained this subject and emphasised various reasons for the low proportion of medical specialties like family medicine, radiology and

psychiatry.⁴ In low and middle-income countries (LMICs), the situation is even more critical because trained health personnel are migrating to developed/high income-countries (HICs). This is substantial to assist developing countries to attain self-reliance and employ evidence-based practice in healthcare. It is evident from studies that there is a strong association between experience during medical school and postgraduate research initiatives, and career successes in academic medicine.⁵ In the prevalent shortage of trained physicians, it is important to know the changing trend, interests and expectations among the new generation of medical students. Selecting a medical specialty can be a confusing and complicated experience for medical students and house officers. Few researches have been conducted to estimate the future distribution of medical students among medical specialties and factors accountable for that distribution.⁶ There are many problems, factors and incentives such as the desire to earn a high income, family responsibilities, interest in one specific field,

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prestige related to certain specialties, years of training etc. that influence an individual's choice when deciding a career.¹ Some studies in the past have even suggested that career preference at the beginning of medical school may be a predictor of student's eventual career.⁷ All medical institutions in Pakistan have a five-year MBBS programme of which during the first two years the primary focus is on basic health sciences, with steadily increasing exposure to clinical rotations for the remaining three years, and after that there is one-year mandatory internship at a teaching hospital. Literature exhibits that few researches have been conducted in Pakistan also to explore specialty selection. A study⁸ was conducted in 2007 in two private and public institutions, and showed that a high proportion of medical students and fresh graduates in Karachi chose the same medical specialties. This might lead to saturation in that specialisation and leave the population underserved in other important fields.

Another study was conducted at a private institution in Pakistan, but the sample size was not large enough and it was done at a single centre.⁹ Medical specialties within an institution may influence the students' career choices and that hands-on experience in a specific field is a main factor encouraging a student's interest in a specific specialty. The current study was planned to determine the career choices of medical students of two public-sector medical colleges in urban Pakistan, and to see the factors affecting the choices.

Subjects and Methods

The cross-sectional study was conducted from May 2015 to May 2016 at Dow Medical College (DMC), Dow University of Health Sciences (DUHS), and Sindh Medical College (SMC), Jinnah Sindh Medical University (JSMU), Karachi. Fourth and fifth year medical students and house officers were included, while students of the first three years were excluded as they had limited clinical exposure. Foreign students and those who were not present at the time of data collection were also excluded. All study participants were selected through non-probability, purposive sampling technique. Ethical permission was taken from the DUHS review board, and written informed consent was obtained from the subjects. A self-administrated structured questionnaire was developed in the English language. Data was collected regarding gender, age, socioeconomic status, study year, future

work preference (inland, abroad) and satisfaction with the medical profession (satisfied or not satisfied). Socioeconomic status was observed as defined in the Pakistan Institute of Developing and Economics (PIDE) working paper.¹⁰ Respondents were asked to mention their 1st, 2nd and 3rd choices of medical specialty and mention factors affecting their choice.

Sample size was calculated by taking percentage of 48.1¹¹ of factor opportunity to contribute to society, 95% confidence level and 5% margin of error. A total 384 participants were required, but 15% more were enrolled to account for possible non-respondent rate. The collected data was entered and analysed using SPSS 20.

Results

Of the 445 subjects, 260(58.4%) were from DMC and 185(41.6%) were from the SMC. The overall mean age of the sample was 22.02 ± 1.77 years, and 314(70.6%) were females. Besides, 389(87.4%) subjects belonged to the middle class, 41(10%) were from the upper class, and 15(3.4%) belonged to lower or lower middle class. There were 206(46.3%) and 194(43.6%) students from 4th and

Table-1: Characteristics of Medical Students and House Officer.

| Characteristics | n (%) |
|--|------------|
| Medical college | |
| DMC | 260 (58.4) |
| SMC | 185 (41.6) |
| Gender | |
| Male | 131 (29.4) |
| Female | 314 (70.6) |
| Age (years) | |
| 20 - 22 | 298 (67.0) |
| 23 - 26 | 147 (33.0) |
| Socio-economic status | |
| Lower Class | 4 (0.9) |
| Lower Middle | 11 (2.5) |
| Middle Class | 389 (87.4) |
| Upper Class | 41 (9.2) |
| Participants | |
| Fourth Year | 206 (46.3) |
| Fifth Year | 194 (43.6) |
| House Officer | 45 (10.1) |
| Satisfied with medical field | |
| No | 54 (12.1) |
| Yes | 391 (87.9) |
| Work inland or abroad after graduation | |
| Inland | 240 (53.9) |
| Abroad | 205 (46.1) |

DMC; Dow Medical College, SMC; Sindh Medical College

Table-2: Medical specialty first three choices among Medical Students and House Officer.

| Rank | First choices (n=445) | n (%) | Second choices (n=432) | n (%) | Third choices (n=337) | n (%) |
|------|--------------------------|----------|-------------------------|----------|-------------------------|---------|
| 1 | Internal Medicine | 67(15.1) | Cardiology | 61(13.7) | Internal Medicine | 44(9.9) |
| 2 | Cardiology | 47(10.6) | Pediatrics | 50(11.2) | Paediatrics | 43(9.7) |
| 3 | Paediatrics | 46(10.3) | Internal Medicine | 48(10.8) | Neurology | 27(6.1) |
| 4 | General Surgery | 40(9.0) | Neurology | 41(9.2) | Cardiology | 26(5.8) |
| 5 | Obstetrics & Gynaecology | 32(7.2) | General Surgery | 29(6.5) | General Surgery | 26(5.8) |
| 6 | Neurosurgery | 30(6.7) | Obstetrics & Gynecology | 28(6.3) | Obstetrics & Gynecology | 22(4.9) |
| 7 | Cardiac Surgery | 26(5.8) | Endocrinology | 22(4.9) | Psychiatry | 20(4.5) |
| 8 | Neurology | 19(4.3) | Plastic Surgery | 15(3.4) | Nephrology | 19(4.3) |
| 9 | Gastroenterology | 15(3.4) | Cardiac Surgery | 14(3.1) | Orthopedics | 16(3.6) |
| 10 | Dermatology | 15(3.4) | Neurosurgery | 13(2.9) | Endocrinology | 15(3.4) |
| 11 | Orthopaedics | 13(2.9) | Psychiatry | 11(2.5) | Neurosurgery | 12(2.7) |
| 12 | Psychiatry | 12(2.7) | Orthopedics | 10(2.2) | Radiology | 11(2.5) |
| 13 | Anaesthesia | 11(2.5) | Nephrology | 10(2.2) | Dermatology | 11(2.5) |
| 14 | Endocrinology | 9(2.0) | Gastroenterology | 9(2.0) | Gastroenterology | 11(2.5) |
| 15 | Radiology | 9(2.0) | Anaesthesia | 8(1.8) | Anesthesia | 10(2.2) |

5th year respectively, and 45(10%) were house officers. While answering the question about satisfaction with the medical field, 54(12.1%) subjects said they were not satisfied. There was no significant difference between the number of students who wanted to work inland and abroad (Table 1).

Table-3: Factors influence to choose the medical specialty choices.

| Influencing factors | n (%) |
|---|-----------|
| Job security | |
| No | 271(60.9) |
| Yes | 174(39.1) |
| Feasible working hour conditions | |
| No | 318(71.5) |
| Yes | 127(28.5) |
| Prefer to treat emergency case | |
| No | 267(60.0) |
| Yes | 178(40.0) |
| Prestige in working in that field | |
| No | 68(15.3) |
| Yes | 377(84.7) |
| Personal family experience/ interest in that field | |
| No | 185(41.6) |
| Yes | 260(58.4) |
| lack of physicians /surgeons of that specialty in the country | |
| No | 324(72.8) |
| Yes | 121(27.2) |
| Specialty offers a variety of career workshops and courses | |
| No | 223(50.1) |
| Yes | 222(49.9) |
| Options for fellowship training | |
| No | 188(42.2) |
| Yes | 257(57.8) |

Top 15 medical specialties were ranked according to the respondents' top 3 choices (Table 2). Internal medicine 67(15.1%), cardiology 47(10.6%), paediatrics 46(10.3%) and general surgery 40(9.0%) were the four highest ranked specialties. Cardiology was the top-ranked second-choice specialty 61(13.7%), followed by paediatrics 50(11.2%), internal medicine 48(10.8%) and neurology 41(9.2%). For the third choice, internal medicine was the most popular choice 44(9.9%), followed by paediatrics 43(9.7%), neurology 27(6.1%), and cardiology 26(5.8%). There were 271(61%) subjects who reported that they did not choose the specialty to secure a job in that field (Table 3). There were 318(71.5%) students who denied that they chose the specialty because of feasible working hour conditions, and 178(40%) confirmed that they preferred to treat emergency cases. The majority 377(84.7%) reported that prestige in working in that field was the reason of their respective choices. Also, 121(27%) subjects said the reason of their choice was a lack of physicians or surgeons in that specialty in Pakistan.

Discussion

In the current study, internal medicine, cardiology, paediatrics and general surgery were the four highest ranked specialties as the first choice. In another study conducted in Pakistan, internal medicine was also the favourite of 20.5% medical students, followed by surgery (15.0%), paediatrics (13.5%), and obstetrics and

gynaecology (9.3%).⁸ A study¹² conducted at DMC to compare differences in career preference between first and final year students also revealed internal medicine (17%) as the top-ranked specialty, followed by cardiology (12.5%) and paediatrics (11%). A cross-sectional study¹³ in Kenya reported that internal medicine was among the top four ranked specialties of first choice. In another study¹⁴, the preference of specialty choice among Korean medical students was internal medicine, psychiatry and paediatrics.

However, a study conducted in Karachi¹⁵ showed contrasting findings, where more than half of students preferred surgery and its associated sub-specialties followed by internal medicine (26.8%) as their first choice. Another cross-sectional study¹⁶ conducted in Karachi also showed surgery as the top most choice of students in terms of career preference. Evidence cited indicates a shifting trend in medical students' career preferences in the last 10 years in Pakistan.

The current study's findings showed that cardiology was the top-ranked specialty of 2nd choice, which is not consistent with results of a study⁸ in which internal medicine was the most prominent specialty for 2nd choice. Our findings also confirmed that internal medicine was again the most highlighted 44(9.9%) specialty of 3rd choice. These findings were not quite different from those reported from a medical university in Pakistan.⁹ In Pakistan, doctors' career choices are characterised by a tough competition to secure the market share in profitable fields of medical practice, like cardiology. Largely, no health policies have been seen from the government about medical regulatory authorities and organisations to put up a career direction for the new graduates or future doctors; though slight improvements have been observed. Several medicine fields, such as endocrinology, anaesthesia, family medicine, forensic medicine and radiology, were not found as high-priority choices among the subjects in the current study. Therefore, substantial manpower shortages in such fields may occur. Developing countries are also facing shortage of manpower in basic medical and research faculty.⁹ In our study, most of the medical students stated that job security and feasible working hours did not influence their choices. However, a notable proportion of medical students confirmed that preference of emergency treatment influenced them and a high proportion of study participants also reported that prestige in working in their chosen field was the reason

of their choice. Opportunity to treat and help people was highlighted by 95% medical students of King Saud Bin Abdul Aziz University as the factor affecting their career choice specialty.¹⁷ Helping patients, interest in the medical field and having a prestigious career were the most highlighted reasons of choosing the medical profession among the 2nd year students at King Abdul Aziz University.¹⁸ Lack of physicians or surgeons was also a stated reason for specialty choice of three-fourths of medical students. Factors identified in our study are not consistent with earlier findings¹⁹ that reported lifestyle and income as more important factors for medical students in their career choice. However, a study²⁰ also reported the nature of patient care as an important factor along with educational experiences and lifestyle. Prediction and judgment of specialty choices of medical students is a complex process and further research is required to explore this subject.²¹ Dissimilar factors are also found in a study²² in Sudan which reported that personal interest was the most common reason among students while choosing their specialty. Moreover, studies conducted in Turkey and Jordan^{23,24} showed financials, prestige, intellectual content of the specialty and the individual's competence were the driving factors. A well-informed health policy regarding career choices and personnel-deficient medical fields may provide a career direction to future doctors towards understaffed fields such as primary care. The overall health system economic benefits have been observed in population where a higher number of primary care physicians practice.²⁵

Conclusion

Medical students chose a wider range of specialties and stated varying factors affecting their choices. The findings need to be pondered upon by medical councils to work on certain factors and promote the interest of future doctors considering their needs in respective developing countries and the burden of patients in those fields. There is a need to continue such studies to detect the shifts in trends, and to work on the causes to ensure uniform distribution of health workforce in all fields.

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