

SELECTION OF MEDICAL PROFESSION BY FIRST YEAR MEDICAL STUDENTS

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Article Citation:

Mukhtar F, Daud S, Hashmi NR, Zaman S, Masood A, Bhatti A. Selection of medical profession by first year medical students. Professional Med J Dec 2009; 16(4): 556-563.

ABSTRACT...Background: The factors which influence medical students' selection of specific medical specialties have been analyzed by a number of studies in the literature. However, very few studies have been carried out to ascertain the factors which influence students' selection of the medical profession itself. The literature review did not identify any such study conducted in Pakistan, therefore this particular venture was undertaken. **Objectives:** To establish a baseline of factors that affect student's decision in selecting medical profession and to determine if there was a significant difference in factor by gender. **Place and Duration of Study:** Lahore Medical and Dental College, between January and February 2009. **Methodology:** The present study was a cross-sectional survey in which the first year MBBS class of Lahore Medical and Dental College, comprising ninety students were part of the study. Data was collected using a pre-formed structured questionnaire, which was pretested before adoption of the final version. The collected data was analyzed using version 16 of the statistical package for social sciences (SPSS). Data is presented in the form of tables and figures. It is described in the form of frequencies and percentages. Inferential statistics were done using Fisher Exact test at 5% level. **Results:** Among 90 respondents, 58(64%) were females, 74(82%) were between 18-20 years of age, 81(90%) had their residence in Pakistan, 57(63%) of the respondents' fathers and 26(29%) of their mothers had attained postgraduate education. Of the respondents' parents, 29(32%) of the fathers and 12(14%) of the mothers belonged to the medical profession. All students taking two attempts at FSc/A-level/American high examination also took two attempts at the entry test to a medical college ($p < 0.001$). A large proportion 10(59%), of students who attempted the entry test twice had fathers who were doctors. The popular reasons for selection of medical profession by the respondents included personal interest (89%), parental wish (58%) and a desire to serve humanity (41%). Among the respondents 100% males had a personal interest in medical profession in contrast to 83% female respondents ($p = 0.012$), 100% male respondents were influenced by parental wish compared to 34% females ($p < 0.001$), 100% males in contrast to 9% females identified humanitarian concern ($p < 0.001$) as factors influencing selection of medical profession. The prestigious status of the profession, parents being doctors, financial incentives, better career opportunities and a better chance to go abroad were the factors identified by only the male respondents as compared to the female respondents in influencing their choice of medical field ($p < 0.05$). **Conclusion:** The overall frequent choices for selection of medical profession included personal interest in the profession, parental wish and a desire to serve humanity. Whereas, parents being in the same profession, financial incentives, better career opportunities and the prestige associated with the profession were identified as motivating factors by only the male respondents.

INTRODUCTION

The medical profession is a popular career choice amongst students which allows entry to students belonging to a certain strata of the population; ones with a brilliant academic record¹. Students become eligible to

Article received on: 08/05/2009
Accepted for Publication: 18/06/2009
Received after proof reading: 09/10/2009
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enter a medical college after they have successfully cleared the entrance examination. And keen students are ready to take a number of attempts at it, in order to ensure their admission into the college. The journey they embark upon is not limited to a five year training in a medical college but includes a year of internship after college. The present era of post graduation and specialization has further prolonged the study period². This extensive MBBS curriculum requires a lot of hard work on the part of the student³. And during the course of study medical students face multi-tiered pressures: academic overload, inability to take adequate sleep, uncertainty about their future and a constant fear of not succeeding⁴. A study conducted in six medical colleges across Pakistan implicated heavy workload for the psychological problems found amongst students⁵.

There are medical students who do not succeed in completing their studies as they are unable to cope with the academic burden or do not want to pursue their career on graduation. The reasons for attrition may vary but this medical student wastage certainly leads to social and emotional problems at the individual level and is a source of financial loss for medical colleges and the health care industry^{6,7,8}. In order to retain medical graduates in the medical field it is of paramount importance to devote attention to their recruitment and education⁹. Medical schools should give out information to prospective students regarding the challenges, strains and difficulties faced by medical students and the factors which give rise to burn outs and dissatisfaction amongst them; so as to help them make informed decisions based on self assessment. This will ensure entrance of students with the required motivation based on self-selection of the profession¹⁰.

Various studies have identified different reasons which influence a students' choice for selecting the medical profession. These include a concern for humanity, the availability of a vast range of job options, feeling of accomplishment, recognition for their work, and the esteem associated with medical profession^{11,12}. In a study carried out in Brazil, medical students' intention to pursue with their studies was seen to be significantly associated

with autonomous motivational drive in contrast to controlled motivational drive. These students, having autonomous motivation, had a better chance to succeed in facing the challenges imposed by a taxing medical profession¹³.

Analyzing the trend of medical school enrollments; the demographic profile of students and their motives for medical school admission provides a rough estimate of the future prospects of health care in a country and helps in providing guidelines for the improvement of medical schools¹². All over the world feminization of the medical profession is taking place. And gender is known to be a strong demographic determinant of future specialty preference; having implications for our health care industry¹⁴. The identification of the motives for entering medical profession and a determination to maintain the motives highlighted by students will ensure in producing doctors who are compassionate and sympathetic¹⁵. For it is seen that graduating doctors are not empathetic towards their patients, which is blamed on the admission criteria based solely on academic merit having no social ability/awareness aspect to it¹⁶.

In Pakistan no study was identified through literature review on the reasons for selection of medical profession by first year medical students. Keeping this in mind, this particular study was carried out with the aim to establish a baseline of factors that affect students decision in selecting medical profession and to determine if there was a significant difference in factor by gender.

MATERIALS AND METHODS

A cross-sectional study was conducted on the first year medical students of Lahore Medical and Dental College, between January and February 2009. The study subjects included the entire first year class comprising 90 students. Data was collected using a questionnaire containing structured questions on demographics, socio-economic status, family background and reasons for choosing medical profession. The questionnaire was pre-tested before adopting the final version. After data collection it was entered into the computer using software SPSS version 16 for data cleaning and analysis. Data is

presented in the form of tables and figures. It is described in the form of frequencies and percentages. Inferential statistics were done using Fisher Exact test at 5% level. Verbal consent was taken from the participants of the study for publication of the results.

RESULTS

The socio-demographic profile of the students is summarized in (Table I).

Variable	Number	Percentage
Age Group (in Years)		
16-18	09	10
18-20	74	82
20-22	07	08
Residence		
Pakistan	81	90
Abroad	09	10
Parent's monthly income (Rupees)		
< 10,000	00	00
10,001 to 25,000	02	02
25,001 to 100,000	43	48
> 100,000	45	50
Education of Father		
Primary	00	00
Matriculation	04	4.5
Intermediate	04	4.5
Graduate	25	28
Postgraduate	57	63
Education of Mother		
Primary	01	01
Matriculation	04	04
Intermediate	06	07
Graduate	53	59
Postgraduate	26	29
Occupation of Father		
Businessman	32	36
Doctor	29	32
Government Servant	13	15
Engineer	10	11
Teacher	03	03
Landlord	03	03

Occupation of Mother		
Housewife	65	72
Doctor	12	14
Teacher	09	10
Government Servant	03	03
Business woman	01	01

The study subjects comprised 90 students of the first year MBBS class of Lahore Medical and Dental College. Of the ninety students, 58(64%) were females and 32(36%) males. Majority of the students were between 18-20 years of age 74(82%), whereas, 9(10%) and 7(8%) respondents belonged to the age category of 16-18 years and 20-22 years respectively. Data related to the students parents showed that 81(90%) live in Pakistan, 4(4%) reside abroad and in the case of 5(6%) of the students only one parent lives abroad. With respect to the parent's educational qualification, it was seen that a greater number of their fathers 57(63%) as compared to their mothers 26(29%) had attained postgraduate education and only one mother was found to have education up to primary level. The inquiry into the occupational status of the parents revealed 29(32%) of the fathers and 12(14%) of the mothers belonging to the medical profession. Majority of mothers 65(72%) were housewives, whereas, only one mother was a businesswoman. According to monthly income, the parents of 45(50%) of the respondents belonged to groups of earning money greater than Rs. 100,000, 43(48%) to income group between Rs.25,001 to 100,000 and only 2(2%) fell in the income bracket of Rs.10,001 to 25,000.

As is depicted in (Table II), all the students 15(100%), who took the F.Sc./ A levels / American High examination twice, also made two attempts at the entry test to a medical college. There were only two students who

appeared once in their F.Sc./ A levels / American High examination but had two attempts at the entry test. There was a significant difference between the number of attempts at F.Sc./ A levels / American High examination and the entry test ($p < 0.001$).

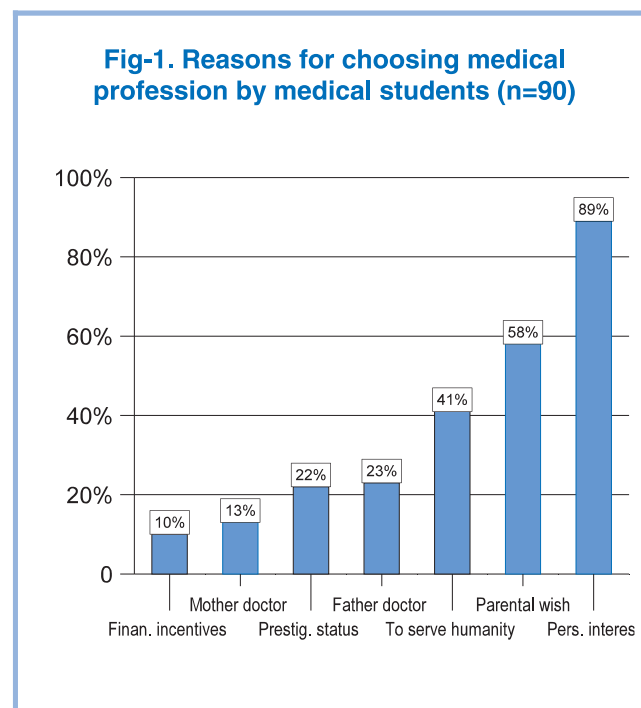
Results show that with increase in the father's educational level, there is a concomitant increase in the number of attempts at the entry test to a medical college by the students. Students whose fathers had education up to postgraduate level, 7(41%), took the entry exam twice as compared to those whose fathers had matriculation level of education 3(18%). A large proportion 10(59%), of students having attempted the entry test twice had fathers who were doctors.

No. of attempts at F.Sc./A levels/ American high examination	No. of attempts at Entry test to Medical College		Total
	One	Two	
One	73	2	75 (83%)
Two	0	15	15(17%)
Total	73 (81%)	17 (19%)	90 (100%)

$p < 0.001$

Students were inquired about the factors which influenced their selection of the medical profession. The popular reasons identified by the students included; personal interest in the profession by 89% of the respondents, parental wish and a desire to serve

humanity by 58% and 41% of the respondents respectively. Whereas, 23% students, chose the profession because their fathers belonged to the same field. Having a doctor mother was identified by 13% of the students as shown in figure 1.



Among the respondents 100% males had a personal interest in medical profession in contrast to 83% female respondents, 100% male respondents were influenced by parental wish compared to 34% females, 100% males in contrast to 9% females identified humanitarian concern as factors influencing selection of medical profession. While prestigious profession, parents being in the same profession, financial incentives, better career opportunities and a better chance to go abroad were the factors identified by only the males. There was a significant difference between males and females on factors influencing their choice of this profession. (Table-III).

Table-III. Factors influencing selection of medical profession by gender

FACTORS	GENDER				P Value
	Female N = 58		Male N = 32		
	n	%	n	%	
Personal interest Yes	48	82.79	32	100	P = 0.012
No	10	17.24	00	00	
Mother Doctor Yes	00	00	12	37.5	P<0.001
No	58	100	20	62.5	
Father Doctor Yes	00	00	21	65.63	P<0.001
No	58	100	11	34.37	
Parental Wish Yes	20	34.48	32	100	P<0.001
No	38	65.52	00	00	
To serve humanity Yes	05	8.62	32	100	P<0.001
No	53	91.38	00	00	
Prestigious status of profession Yes	00	00	20	62.5	P<0.001
No	58	100	12	37.5	
Financial incentives Yes	00	00	09	28.1	P<0.001
No	58	100	23	71.9	
Better carrier opportunities Yes	00	00	06	18.75	P = 0.001
No	58	100	26	81.25	
To go abroad Yes	00	00	05	15.63	P = 0.005
No	58	100	27	84.37	

DISCUSSION

The literature review found very little work done on this topic. Studies have been conducted on this subject internationally and in the region but none were identified in Pakistan^{13,2}. This study conducted on first year medical students of Lahore medical and dental college, Lahore showed that the entrants to the medical college were

dominated by females (64%) as compared to males (36%). In a study conducted by Avan et al in Pakistan, more females as compared to males were seen entering medical colleges¹⁷. Similar results, have been observed by Puljak et al in their study conducted at the University of Split Medical school, Croatia. They reported 69% females in the first year medical class in the year 2006-

07⁹. A female majority entering medical colleges is also reported by Vaglum et al and Wierenga et al in their studies^{18,15}. This feminization of the medical profession seen all over the world, will have effects for the future in the availability of physicians in different medical specialities¹⁴. As women prefer opting for community based careers in contrast to men, who prefer hospital based careers¹⁹. In our study majority (82%) of first year students were found in the age category of 18-20 years whereas, 10% and 8% were found in the age group of 16-18 years and 20-22 years respectively. The study by Wierenga et al has reported findings consistent with our study. In their study 70% of the students were between 18-22 years of age¹⁵. According to Panna et al, 60.7% of the students belonged to the age category of 18-19 years².

The present study observed that a greater number of fathers (63%) as compared to mothers (29%) had attained post graduate education and none of the parents were illiterate. Only the mother of one student was found to have education up to primary level. A study conducted in India revealed that 86.4% of students' fathers and 73.3% of students' mothers had college education².

Our study revealed that majority of fathers were businessman (36%), followed by doctors (32%), and then government servants (15%). Whereas, a majority (72%) of the mothers were housewives, 14% were doctors and only one mother was a businesswoman. A study conducted in India showed results consistent with our study. A greater proportion of students' fathers (21.5%) as compared to their mothers (11%) were doctors². According to a study by Odusanva et al in Nigeria, students having parents with a medical background were 23%²⁰. And a majority of students having physicians in their families was reported by Milan et al¹².

In our study the parents of 90% students live in Pakistan and 10% live abroad. The parents of 45(50%) of the respondents belonged to income groups of earning money greater than Rs. 100,000, 43(48%) to income group between Rs.25,001 to 100,000 and only 2(2%) fell

in the income bracket of Rs.10,001 to 25,000. The college is a private sector college, having a fee structure which is affordable and payable by parents having a significant monthly income, probably explaining the parents of half of the first year class belonging to an income group greater than Rs. 100,000.

In our study, all the students 15(100%), who took the F.Sc./ A levels / American High examination twice also took two attempts at the entry test to a medical college. There was a significant difference between the number of attempts at F.Sc./ A levels / American High examination and the entry test. ($p < 0.001$). Results show that with increase in the father's educational level, there is a concomitant increase in the number of attempts at the entry test to a medical college by the students. This is in contrast to the study by Lal et al, in which the number of attempts to clear the medical entrance exam decreased with increase in parents education level². A large proportion 10(59%), of students having attempted the entry test twice had fathers who were doctors. This can probably be explained by the fact that the fathers who were doctors, might have clinics or hospitals which they desire be run by their children; compelling the children to take two attempts at the entry test. At times the students take the exam a number of times showing their own interest in the profession⁹.

In the current study several factors were seen to influence the selection of medicine as a profession. The most frequent reason for selecting medical profession in the current study was student's own choice (89%). A study in Nigeria has reported similar findings; 90% students identified primary interest in the profession as an influencing factor²⁰. The studies conducted by McHarg et al and Sobral et al also showed that majority of students opted for medicine because of their own choice^{21,12}. The medical students in Malaysia joined this profession for their interest in medicine²². Whereas, a Polish study quoted "It has always been my dream" as the most frequently opted reason for selection of medical profession²³.

Parents influenced 58% students in deciding to opt for

this profession, in the present study. In contrast to our study, Odusanva et al reported that parental influence was a major influencing factor in selecting medical profession (84%)²⁰. A study by Mcharg et al showed that the support from mothers facilitated the selection of medicine²¹.

In the present study a desire to serve humanity was chosen by 41% of the students. In contrast to our findings, Odusanva et al reported majority (91%) of students choosing this profession out of a desire to serve humanity²⁰. According to a study by Lal et al of Maulana Azad medical College, 74.6% of students had an interest in serving humanity². Many similar studies have identified a concern for humanity, "opportunities for working with people", "the possibility of helping the suffering", and "person oriented motives" as the factors influencing their choice of medicine^{9,12,11,16,18,23,22}.

Prestigious status related to the profession was seen to be another important factor that drags students towards medical school. In our study it was the influencing factor for 22% of the students, and for 48.7% of the students in an Indian study². Comparative results were shown in studies by Hyppola et al and Vaglum et al^{11,18}.

Parents belonging to the medical field, was an influencing factor for some of the students. Father belonging to the same field was a source of inspiration for 23% of our students, while 13% students identified mothers being doctors as the inspirational drive. Contradictory results were observed in a study by Vaglum et al at the University of Oslo. It was seen that father being a physician didn't influence the selection of this profession by the students¹⁸. According to McManus et al having a medical background had no influence in selection of the medical profession by the student²⁴.

In the 1960's and 1970's students were found to be entering the medical profession primarily for financial rewards, polluting the very purpose of helping others and not aiding the production of an ideal physician²⁵. In our study a minority (10%) of students identified financial incentives as the factor for selection of this profession. This is in contrast to the study by Puljak et al and Hypollo

et al, who have identified financial gains as the pivotal reason for choosing medical field^{9,11}.

A gender difference was seen in factors influencing the selection of medical profession, in our study. Amongst the females, personal interest, followed by parental wish and desire to serve humanity were the choices for entry into this field. While amongst the males, in addition to the afore-mentioned reasons parents being in the same profession, financial incentives, better career opportunities, prestigious profession and a better chance to go abroad were the influencing factors. There was a significant difference between males and females on factors influencing their choice of this profession ($p < 0.05$). Such gender differentials were reported by other studies as well, and according to one such study, a greater number of females opted for "opportunities for working with people" whereas the common reason amongst males was "social prestige/status" related to the medical field¹⁶. In another study by Vaglum et al majority of females were motivated by "person oriented" factors, but no difference was seen amongst men and women in status/security related to the profession¹⁸. More women than men opt for medicine because of interest in people¹¹. When a self administered questionnaire based on demographics and family background was given to students at University of West Indies by Wirenga et al, it was seen that males predominantly selected medicine because of the prestigious status linked to it¹⁵. Millan et al found no difference in motivations for choosing the medical profession among males and females¹².

CONCLUSION

The overall frequent choices for selection of medical profession included personal interest in the profession, parental wish and a desire to serve humanity. The reasons for selection of medical profession amongst the males also included parents being in the same profession, financial incentives, better career opportunities and the prestige associated with the profession whereas, amongst females personal interest and parental wish were identified as motivating factors.

RECOMMENDATIONS

1. Students should be provided counseling before they make a decision of admission in medical

colleges, so that they have realistic expectations.

2. Further studies should be conducted to understand the subject matter more fully.
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