REASONS FOR CHOOSING SPECIALITY AFTER GRADUATION AMONG STUDENTS OF A PRIVATE MEDICAL COLLEGE IN PAKISTAN

Imran Shaikh1, Khola Noreen2, Nadia Khalid3, Riasat Ali Nehra4, Kauser Aftab Khan5, Farhan Muhammad Qureshi6

1Professor & Head of department, Community Health Sciences, Bahria University Medical & Dental College, Karachi
2Assistant Professor, Community Health Sciences, Gujranwala Medical College, Gujranwala.
3Lecturer, Community Health Sciences, Bahria University Medical & Dental College, Karachi.
4Assistant Professor, Anatomy Department, Red Crescent Medical and Dental College. Dina Nath
5Assistant Professor, Community Health Sciences, Gujranwala Medical College, Gujranwala
6Senior Lecturer, Community Health Sciences, Bahria University Medical & Dental College, Karachi.

Correspondence: Khola Noreen. Email: drkhaula@yahoo.com

Abstract

Background: Diverse factors influence the career choice of undergraduate medical students. This study was carried out to identify career preferences and factors influencing their selection among undergraduate medical students

Methods: The descriptive cross sectional study was conducted among under graduate students. Final MBBS medical students (84) were interviewed. They were interviewed for career preference after finishing medical school and then for reasons of choosing a specific specialty. All information gathered was on voluntary basis. Anonymity and confidentiality was maintained. The study was approved by the college ethical review committee

Results: Out of total 84 students 61 (72.6%, males & females) decided about the specialty in final year while 23 (27.4%, males & females) were undecided in choosing their specialty. Among those who have decided in males (n=13) Internal Medicine was the first choice with 68.4% (n=13), general surgery 63% (n=12) followed by Pediatrics 31.6% (n=7). Among females n=31, internal medicine was the first choice with 59% (n=31), Pediatrics 38% (n=16) followed by Family Medicine 38% (n=16) and General Surgery 35% (n=15). Regarding factors influencing choice of specialty personal interest is the top factor in males & females with 72%(n=44), content of specialty 16% (n=10), role model and close interaction with patients15% (n=9), financial reward ranks fourth13% (n=8) and intellectual challenge & desire practice setting 11.5% (n=7). Among undecided for specialty (males & females) n=23, most of the students are of the opinion that insufficient information is the top most reason (56%) n=13, followed by lack of guidance (43%) n =10, lack of role model (39%) n=9 is the third leading factor for being undecided.

Conclusion: The trend of preferring Clinical over Basic Sciences is evident in the study. Interestingly Family medicine was also a preferred specialty among females. In improving the health outcomes Pakistan needs Family physicians trained to provide low cost services at community level.

Key words: Career, medical students, specialty preference.

Introduction

There is no clear agreement about why medical students choose one particular specialty over another (1). Several factors have been identified which include socio demographic characteristics, personality attributes, expected income from chosen specialty, parents choices and their attitudes about the chosen specialty(2,3) expected income and duty hours and demands of the particular specialty (4) . Curriculum content, experience at medical school, role models, societal appreciation of specialty and gender difference are also documented as strong determinants of career choice(5).

The career preferences of present day undergraduate medical student are not only important for their future career but also reflect the availability of future doctors in country which ultimately affect the health system of a country (6, 7). Thus by identifying the career preference of undergraduate medical students and the factors effecting these choices facilitate the planning of health care service providers and other stakeholders in order to strengthen the health system of country. It provides baseline data to medical educationist to make necessary changes in medical curricula to influence career choices as per demands of country's health system (8).
It is assumed that medical students mostly make career choices after they have completed medical school, however there is strong evidence that career choices can be determined before the completion of medical school and mostly by the end of year four and final year (9, 10). This study was carried on final year medical students out to assess students preference in choosing a specialty after graduation and to evaluate the reasons for choosing a specific specialty.

Methodology

The study was conducted on final year medical students of Bahria University Medical and Dental College. These students were interviewed regarding career preference after finishing medical school and reasons of choosing a specific specialty. Those students who are still indecisive were asked about reasons. All information gathered was on voluntary basis. Students not interested in filling the questionnaire and those who do not give consent for study were not included in study. Questionnaire were filled after description by the principal investigator. Anonymity and confidentiality was maintained. The study was approved by the ethical review board of Bahria University Medical and Dental College Karachi.

Results

Study demographics

The study was conducted on students of Final year (5th year), 84 students took part in the study. Of these 28 (33.3%) were males and 56 (66.6%) were females. The students were asked about the specialty they prefer and factors influencing their choice of a specific specialty. Out of total 84 students 61 (72.6%, males & females) were decided about the specialty in final year while 23 (27.4%, males & females) were undecided in choosing their specialty.

Table 1: Socio demographic characteristics of Students (n=84)

| Variable                  | Frequency | Percent |
|---------------------------|-----------|---------|
| Gender                    |           |         |
| Male                       | 28        | 33.3    |
| Female                    | 56        | 66.7    |
| Occupation of Father / Mother |       |         |
| Doctor                     | 15        | 17.9    |
| Engineer                   | 11        | 13.1    |
| Bipartisan                 | 16        | 19.0    |
| Forcen                     | 10        | 11.9    |
| Pet. Job                   | 17        | 20.2    |
| Govt. Job                  | 7         | 8.3     |
| Others                     | 8         | 9.6     |
| Mother                     |           |         |
| Housewife                  | 61        | 72.6    |
| Doctor                     | 11        | 13.1    |
| Teacher                    | 7         | 8.3     |
| Pet. Job                   | 2         | 2.4     |
| Others                     | 3         | 3.6     |
| Responsed Education        |           |         |
| FSc.                       | 68        | 81.0    |
| A Level                    | 12        | 14.3    |
| Others                     | 4         | 4.8     |
| Admission in MBBs 1st year - Had you already decided on specialty after graduation | | |
| None                       | 25        | 43.1    |
| Internal medicine          | 9         | 16.7    |
| General surgery            | 5         | 8.6     |
| Pediatrics                 | 4         | 6.8     |
| Oyo/Ob                      | 2         | 4.8     |
| Eye                        | 1         | 1.4     |
| Others                     | 10        | 17.8    |
| Name of specialty chosen in forth/final year | | |
| Decided                    | 61        | 73.6    |
| Undecided                  | 33        | 27.4    |

Specialty preferences of medical students

Out of total 84 students 61 (72.6%, males & females) were decided about the specialty in final year while 23 (27.4%, males & females) were undecided in choosing their specialty. Among those who have decided in males (n=13) Internal Medicine was the first choice with 68.4% (n=13), general surgery 63% (n=12) followed by Pediatrics 31.6% (n=7). Among females n=31, internal medicine was the first choice with 59% (n=31), Pediatrics 38% (n=16) followed by Family Medicine 38% (n=16) and General Surgery 35% (n=15).

Table 2: Specialty preference after graduation (Decided = 61)

| Specialty choices                  | Male (n=19) | Female (n=42) | Total (n=61) |
|------------------------------------|-------------|---------------|--------------|
| No   | %  | No   | %  | No   | %  |
| Internal medicine                  | 13          | 68.4          | 31           | 58.9          | 44           | 72.1          |
| General surgery                    | 12          | 63.2          | 15           | 35.7          | 27           | 44.3          |
| Pediatrics                          | 6           | 31.6          | 16           | 38.1          | 22           | 36.0          |
| Obstetrics & Gynecology             | 3           | 15.8          | 8            | 19.0          | 11           | 18.0          |
| Ear, Nose & Throat                  | 5           | 26.3          | 6            | 14.3          | 11           | 18.0          |
| Psychiatry                          | 1           | 5.3           | 6            | 14.3          | 7            | 11.5          |
| Family medicine/General practice   | 5           | 26.3          | 16           | 38.1          | 21           | 34.4          |
| Dermatology                         | 3           | 15.8          | 7            | 16.7          | 10           | 16.4          |
| Radiology                           | 3           | 15.8          | 8            | 19.0          | 11           | 18.0          |
| Others                              | 5           | 26.3          | 10           | 23.8          | 15           | 24.6          |

No significant difference was observed amongst gender (p>0.05)

Factors influencing specialty preferences Regarding factors influencing choice of specialty personal interest is the top factor in males & females with 72%(n=44), content of specialty 16% (n=10), role model and close interaction with patients15% (n=9), financial reward ranks fourth13% (n=8) and intellectual challenge & desire practice setting 11.5% (n=7).

Table 3: Factors influencing career preference of students (Decided= 61)

| Factors                                     | Male (n=19) | Female (n=42) | Total (n=61) |
|---------------------------------------------|-------------|---------------|--------------|
| No   | %  | No   | %  | No   | %  |
| Personal interest                           | 11          | 57.9          | 33           | 78.6          | 44           | 72.1          |
| Role of Models in Medical College           | 5           | 26.3          | 4            | 9.5           | 9            | 14.7          |
| College clinical experience                 | 5           | 26.3          | 2            | 4.7           | 7            | 11.5          |
| Intellectual challenge                      | 2           | 10.5          | 4            | 9.5           | 6            | 9.8           |
| Close interaction with pts                  | 6           | 31.6          | 3            | 7.1           | 9            | 14.7          |
| Content of specialty                        | 2           | 10.5          | 8            | 19.0          | 10           | 16.4          |
| Desired practice settings                   | 1           | 5.3           | 6            | 14.3          | 7            | 11.5          |
| Fixed working hours                         | 1           | 5.3           | 3            | 7.1           | 4            | 6.6           |
| Specialty prestige                          | 2           | 10.5          | 2            | 4.7           | 4            | 6.6           |
| Financially rewarding                       | 1           | 5.3           | 7            | 16.7          | 8            | 13.1          |
| Parental preference                         | 1           | 5.3           | 3            | 7.1           | 4            | 6.6           |
| Burden of disease                           | 2           | 10.5          | 2            | 4.7           | 4            | 6.6           |
| Few specialist in the country               | 2           | 10.5          | 2            | 4.7           | 4            | 6.6           |
| Working with new technology                 | 1           | 5.3           | 1            | 2.4           | 2            | 3.3           |
| Opportunities for contribution to society  | 1           | 5.3           | 2            | 4.7           | 3            | 4.9           |
| Opportunities for research                  | 1           | 5.3           | 3            | 7.1           | 4            | 6.6           |
| Polcies/mison of medical college            | -           | -             | -            | -             | -            | -             |
| Advice from family/ faculty                 | 1           | 5.3           | 2            | 4.7           | 3            | 4.9           |
| Advice from practicing physician            | 1           | 5.3           | 2            | 4.7           | 3            | 4.9           |
| Better opportunities in private sector      | 1           | 5.3           | 3            | 7.1           | 4            | 6.6           |
| Focus on community health                   | 1           | 5.3           | 1            | 2.4           | 2            | 3.3           |
Among undecided for specialty (males & females) n=23, most of the students are of the opinion that insufficient information is the top most reason (56%) n=13, followed by lack of guidance (43%) n=10, lack of role model (39%) n=9 is the third leading factor for being undecided. **Table 4: Reasons for being undecided (n=23)**

| Reasons                             | Number | Percent |
|-------------------------------------|--------|---------|
| Insufficient information            | 13     | 56.5    |
| Lack of guidance                    | 10     | 43.4    |
| Lack of role model                  | 9      | 39.1    |
| Insufficient exposure to various specialties | 8      | 34.8    |
| Poor clinical training              | 6      | 26.0    |
| Training concentrating only in large hospitals | 4      | 17.4    |
| Less exposure to illness presented in community | 2      | 8.7     |

**Discussion**

The future career specialties preferred and the factors involved in making these choices by medical students are of great significance for balanced distribution of doctors in different specialties.

In our study, majority of the students 72.6% have decided on the specialty. Most selected specialties were Internal Medicine, General surgery and Paediatrics. In recent study conducted on medical students of Karachi reported Surgery as first choice, followed by Medicine and the Pediatrics (11). Study conducted at India documented Surgery, Medicine and Paediatrics as first three choices (12). This trend is also in line with international studies (13, 14). Recent study conducted at China reported Internal Medicine and Surgery as most preferred specialty by medical students. The result of this study was in accordance to result of our study (15). Results of study conducted in Canada was also in line with our study with Internal Medicine as first choice, Surgery second and Paediatrics as third most preferred specialty (16).

In our study top three specialty chosen were inconsistent with previous studies, however main difference observed was that both male and females chose internal medicine as first choice which is contradictory to previous researches which highlighted that surgery and allied are mostly preferred by males (11, 12). This shows that in future there will more competition for medicine and allied. Moreover, nearly 35% females selected surgery and allied. This trend also supported the fact that now trends are changing and Surgery is also chosen by female medical students. Similar finding were also highlighted in recent study (17).

Striking difference in our study was that family medicine was opted as third choice which strongly contradicts previous studies as it was not preferred specialty in previous researches. The selection of family medicine as third choice by female students is peculiar. It was opted by 38% of female students which is almost equal to second choice. It is strongly contradictory to recent research on students of private medical college in which only 7.8% students chose this specialty. There has been substantial rise in selection of this specialty from 7.8% in previous research to 38% in our research (18). Previous researches also graded family medicine least selected specialty.

It’s not included in priority list of medical students throughout the globe (19, 20). It is optimistic to note that now there is growing trend towards family medicine. This specialty is integral for successful delivery of health services in underserved area of Pakistan. Lack of solid base for primary health care is responsible for inadequate utilization of health care services. Today, we are standing at crossroad where we need to strengthen the health care system for effective provision of healthcare services.

In Pakistan family medicine is recognized by College of Physicians and Surgeons as specialty but at under graduate level it is still not incorporated into basic core curriculum of medical school certified by Pakistan Medical and Dental Council. As results doctors graduating from these medical colleges have no concept of holistic care approach of family medicine (21). There is dire need to restructure our current medical education system of country in order to redistribute medical students in deficient specialties. This can be only possible by in-depth exploration of various factors influencing career selection.

Regarding factors influencing choice of specialty, most of the students reported that personal interest is the top factor that influences the career selection. This makes logic because personal interest is strong driving force for most of the students to pursue their career. This is similar to the results of studies in Kingdom of Saudi Arabia, Pakistan and Taiwan (22, 23). Previous evidence has supported the fact that personal interest of students is influenced by various environmental factors affecting the career choice of medical students. Environmental factors including students’ own educational experience as well as environment and teaching strategy adapted by medical college are the strong determinant of career choice of student (22, 24). This factor is also evident in our study. As mostly parents of students are practicing doctor and moreover students of private medical college are exposed to problem based learning which make them sensitize with current socio cultural scenario of our country and hence influence their future career choices. Other factors highlighted in our study were financial income and prestige as influential factor for career selection. These factors are also reported in previous researches (25, 26).

As in our country family medicine is considered as an ‘inferior’ specialty with low prestige and remuneration associated with this field is lacking (27). In our study most of the female students were interested in perusing family medicine as career. This is positive trend which can prove to be useful strategy to redistributed
medical students in deficient fields in order to make it sure that these student join this facility as career ,financial incentives and pay scale of this specialty must be revised(28). This fact is also supported by previous research in which establishment of Public Health school at Gambia with fringe job offers and attractive salaries and prestigious appointments after graduation resulted in increase number of medical graduates selected public health as their career (29).

Among students undecided for specialty most of the students were in opinion that insufficient information, lack of guidance and role model are main factor responsible for being indecisive regarding specialty choice. All these factors points towards lack of formal career counseling for medical student. The formal mentor ship program can address all these issues effectively. It is supported by previous research in which implementation of longitudinal mentor ship program in U.S. According to this program students receive career counseling from primary health care physician. It was initiated at first year MBBS and continued through final year and proved to be effective strategy in final decision making of students. As a result majority of students chose primary health care as their career after graduation. This strategy proves to be as effective in full filling deficient number medical professionals in field of public health (30) 

Lack of role model is also documented as important determinant of indecisive attitude of medical students. Unfortunately we have dearth of trained teachers which could act as role model for future generation and guide them regarding future career choice in particular specialty. Every medical teacher should strive to be the role model for future generation and try to depict exemplary behavior for students to be followed in their professional life. It's not only the privilege but also duty of every medical teacher to educate future doctors. They are not only responsible for enhancing their knowledge and practical skills but also retaining the students in particular specialty (31).

Conclusion
The trend of preferring Clinical over Basic Sciences is evident in the study. Students are more towards Internal medicine, General surgery & Pediatrics. Family medicine was also a preferred specialty among females. In improving the health outcomes Pakistan needs Family physicians trained to provide low cost services at community level. Strengthening health care delivery system by trained Family Physicians is the way forward for meeting the health care needs of our community.

Limitation
Although our study fairly highlighted the factors affecting career choices however the sample size was very small only restricted to final year MBBS Students. Moreover, since students were only from final year MBBS and their choices may get changed after the house job. For better results further prospective study with larger sample size and follow up after house job should be done in order to determine whether they actually select these specialties after house job as their professional career.

Recommendation
We need to develop faculty and trainers in this field so that they can act as role model for future generation. For this the infra structure for Medical education has to be rejuvenated. Furthermore career counseling of medical students to get more trained family physicians in order to fulfill the demands of country. This strategy can be helpful in redistributing doctors in deficient fields. Furthermore career counseling for medical students is becoming the need of the day as a large number of students remain undecided till graduation and even those who are decided on specialty selection are not counseled.

Conflict of interest
The authors declared they have no conflicts of interests.

Authors' contributions
Study conception and design: Imran Shaikh 
Acquisition of data: Khola Noreen 
Data Analysis: Nadia Khalid 
Interpretation of data: Riasat Ali Nehra 
Critical revision: Kauser Aftab Khan 
Drafting of manuscript: Farhan Qureshi

Acknowledgments
The authors would like to acknowledge all final year medical students at the Bahria University Medical and Dental College, Karachi who took part in the study.

References
1. Furnham A. Career attitudes of preclinical medical students to the medical specialties. Med Educ 1986; 20: 286-300.
2. Roupret M, Hupertan V, Chartier KE. The choice of medical career in a population of 600 secondcycle French medical students preparing for the national ranking examination. Pre Med. 2005; 34:786-90
3. Arnold MW, Patterson AF, Tang AS. Has implementation of the 80-hour work week made a career in surgery more appealing to medical students? Am J Surg 2005; 189:129-33.
4. Kiker BF, Zeh M. Relative income expectations, expected malpractice premium costs, and other determinants of physician specialty choice. J Health Soc Behav 1998; 39:152-67
5. Huda, Nighat, and Sabira Yousuf. "Career preference of final year medical students of Ziauddin Medical University." Educ Health (Abingdon) 19.3 (2006): 345-353.
6. Lambert TW, Goldcare MJ, Edwards C, Parkhouse J. Career preferences of doctors who qualified in the United Kingdom in 1993 compared with those of doctors qualifying in 1974, 1977, 1980 and 1983. BMJ 1996; 313:19-24.
7. Matorin AA, Venegas-Samuels K, Ruiz P, Butler PM, Abdulla A. U.S. medical students choice of
careers and its future impact on health care manpower. J Health Hum Serv Adm. 2000; 22(4):495-509.

8. Morrison, J. M., & Murray, T. S. (1996). Career preferences of medical students: influence of a new four-week attachment in general practice. The British Journal of General Practice, 46(413), 721-725.

9. Zeldow PB, Preston RC, Daugherty SR. The decision to enter a medical specialty: timing and stability. Medical Education 1992; 26:327-32.

10. McManus IC, Lefford F, Furnham AF, Shahidi S, Pincus T. Career preference and personality differences in medical school applicants. Psychology, Health and Medicine. 1996;1:235-48.

11. Akhund S, Ali Shaikh Z, Bux Kolachi H. Career Related Choices of Medical Students from an International Medical College of Karachi, Pakistan. JLUUMHS. 2012 Sep;11(3):180-84.

12. Subba SH, Binu VS, Kotian MS, Joseph N, Mahamood AB, Dixin N, Reddy P. Future specialization interests among medical students in southern India. National Medical Journal of India. 2012 Jul 1;25(4):226-9.

13. Abdulghani HM, Al-Shaikh G, Alhujayri AK, Alohaideb NS, Alsaeed HA, Alshohayeb IS, et al. What determines the selection of undergraduate medical students to the specialty of their future careers? Medical teacher. 2013;35 Suppl 1:S25-30.

14. Alawad AA, Khan WS, Abdelrazig YM, Elzain Yi, Khalil HO, Ahmed OB, Adam OA. Factors considered by undergraduate medical students when selecting specialty of their future careers. Pan African Medical Journal. 2015;20(1).

15. Liang D, Tang CX. The specialty choice of medical students in China: a stated preference experiment. BMC medical education. 2016 Apr 12;16(1):1.

16. Scott IM, Wright BJ, Brenneis FR, Gowans MC. Whether or wither some specialties: a survey of Canadian medical student career interest. BMC medical education. 2009 Sep 4;9(1):57.

17. Dossajee H, Obonyo N, Ahmed SM. Career preferences of final year medical students at a medical school in Kenya-Across sectional study. BMC medical education. 2016 Jan 11;16(1):1.

18. Attaur-Rasool S, Hasan S, Bhatti A. Early Career Intentions Of Newly Inducted Medical Students In A Private Medical College In Pakistan. Gomal Journal of Medical Sciences. 2016 Feb 17;13(4).

19. Bittaye, M., Odukogbe, A.-T.A., Nyan, O., Jallow, B., & Omigbodun, A. O. (2012). Medical students' choices of specialty in The Gambia: the need for career counseling. BMC Medical Education, 12, 72.

20. Dikici MF, Yaris F, Topsever P, Filiz TM, Gurel S, Cubuku M, et al. Factors affecting choice of specialty among first year medical students of four universities in different regions of Turkey. Croat Med J 2008;49:415-20.

21. Iqbal SP. Family medicine in undergraduate medical curriculum: a cost-effective approach to health care in Pakistan. J Ayub Med Coll Abbottabad. 2010;22(4):207-9.

22. Huda N, Youusuf S. Career preference of final year medical students of Ziauddin Medical University. Education for health (Abingdon, England). 2006 Nov;19(3):345-5

23. bdulghani HM, Al-Shaikh G, Alhujayri AK, Alohaideb NS, Alsaeed HA, Alshohayeb IS, et al. What determines the selection of undergraduate medical students to the specialty of their future careers? Medical teacher. 2013;35 Suppl 1:S25-30.

24. Puertas EB, Arósquipa C, Gutiérrez D. Factors that influence a career choice in primary care among medical students from high-, middle-, and low-income countries: a systematic review. Revista Panamericana de Salud Pública. 2013 Nov;34(5):351-6.

25. Aslam M, Ali A, Taj T, Badar N, Mirza W, Ammar A, Muzaffar S, Kauten JR. Specialty choices of medical students and house officers in Karachi, Pakistan.

26. DeZee KJ, Maurer D, Colt R, Shimeall W, Mallory R, Powers J, et al. Effect of financial remuneration on specialty choice of fourth-year U.S. medical students. Acad Med. 2011;86(2):187-93.

27. Iqbal SP. Family medicine in undergraduate medical curriculum: a cost-effective approach to health care in Pakistan. J Ayub Med Coll Abbottabad. 2010;22(4):207-9.

28. Punjani NS, Shams S, Bhanji SM. Analysis of health care delivery systems: pakistan versus united states. Int J Endorsing Health Sci Res. 2014;2(1):38-41.

29. Bittaye M, Odukogbe AT, Nyan O, Jallow B, Omigbodun AO. Medical students' choices of specialty in The Gambia: the need for career counseling. BMC medical education. 2012 Aug 8;12(1):1.

30. Indyk D, Deen D, Fornari A, Santos MT, Lu WH, Rucker L. The influence of longitudinal mentoring on medical student selection of primary care residencies. BMC Med Educ. 2011;11:27.

31. Mileder LP, Schmidt A, Dimai HP. Clinicians should be aware of their responsibilities as role models: a case report on the impact of poor role modeling. Medical education online. 2014;19.