

ABSTRACT:

Family Medicine is the primary care medical specialty concerned with provision of widespread health care to the person and the family irrespective of sex, age or kind of problem. It is the specialty of extensiveness that integrates the natural, medical and behavioral sciences. It is emerging as a frame of knowledge that is being constantly developed, explored and qualified as an integrative entity. In our country, this specialty was announced in late eighties. The number of qualified family medicine specialists is still alarmingly low in our society. There is also a lack of understanding in majority of our population regarding the existence as well as importance of Family Medicine. Rotation of students in family medicine facility as part of undergraduate medical curriculum may help in fostering an interest among medical students in this newly emerging subspecialty which could have profound effect on delivery of quality health care in Pakistan.

Key words: Primary care, Family medicine, Importance, Quality health care, Pakistan.

INTRODUCTION:

Before the arrival of various medical specialized fields, a single doctor was accustomed to take care of all the different sorts of diseases. At the start of the 20th century, nearly all physicians in the domain were general practitioners, and there is no evidence for the significant growth of specialism in the United States before 1851. As the health awareness gradually increased, it became difficult for a single doctor to be proficient in all the fields of medicine. In 1880s, specialization was perceived as a necessity of medical science² and thus numerous specialties were derived. There were definite benefits of this trend as a specialist who deals with a single domain has to refine his skills in a particular field instead of trying to be master of all the fields. Patients encouraged this situation as they found competent doctors dealing with their illnesses and doctors became happy as they had to focus on their own specific fields. With this inclination, the specialists and specializations received popularity and became a source of provision of more economic benefits. The trend of specialization discouraged doctors to serve as a general physician and majority of the doctors entered into a struggle to become specialist. In several disciplines the deficiency of doctors is increasingly visible, and at this instant general practice faces a deficit³. The increasing shortage of doctors in the profession of general practice is also being observed in other countries such as Great Britain, Israel and Canada.^{4,5,6} In view of this change patients found that their family physicians gradually started disappearing from the scene. More than 2 decades ago, the Graduate Medical Education Advisory Committee issued a report predicting an excess of specialists and a need to produce more generalist physicians.⁷ More over no single doctor was capable enough

to look after the different common ailments of all the members of a family by remaining available to them all the time. These circumstances led to the renewal of noble Family Doctor.

METHODOLOGY:

A literature search was conducted from the period of 1995-2015. The search engines used were Pubmed, Google Scholar, Medscape. Keywords and phrases used were primary care, role of general practitioner, history of family medicine, specialty choice and perception of medical student about family medicine. In addition, the references from the articles obtained were searched to find additional articles. In this review, the content of the articles has been arranged in a roughly chronological fashion as: history of family medicine, importance of family medicine and its benefits to the community, choice of family medicine as a specialty and future of family medicine in Pakistan.

Emergence of Field of Family Medicine:

In continuation to the background mentioned above, it was decided to introduce the field of family medicine. It represents the common trunk from which the several twigs of medicine emerged and later developed as separate specialties and subspecialties⁸. It is now accepted as a discrete medical entity, with a demarcated core of abilities, a distinct group of information and a set of arrogances and assurance.⁹ The first academic college of family physicians/general practitioners was established in USA in 1947. Followed by Britain in 1952, Canada 1954, Australia 1958, Philippines 1961, Singapore 1971, Malaysia 1973, New Zealand 1974, and Sri Lanka 1974.¹⁰ By 1984 about 85% of American medical schools had established family practice training programs or had become affiliated with them. Now nearly a quarter of all young doctors enter the family practice residency each year.

Family Medicine in Pakistan:

In 1986, The Aga Khan University Medical College was the first to incorporate the family medicine program for undergraduate within its curriculum. In 1990, the College of Physicians and Surgeons of Pakistan held the first diploma in family medicine examination. This was the start of the recognition of family medicine in Pakistan as a separate discipline. In 1990, the Department of Community Health Sciences at Aga Khan University took on its first batch of family medicine residents. In 1994, the College of Physicians and Surgeons of Pakistan (CPSP) approved a fellowship in family medicine by accepting it as a specialty in its own

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right¹¹. It is obvious that family medicine is a new but steadily growing field.

Family Medicine Integrates Primary Health Care System:

It is a definite fact that quality health care system of a country depends upon the effectiveness of its primary health care system which is defined as essential health care made universally available to individuals and families in the community and acceptable to them through their full contribution and at a reasonable cost¹². People and countries with adequate access to primary care facilities, utilize a number of health care and monetary benefits, including the following:

- Better preventive care for the community^{13,14}
- Less use of emergency departments and hospitals^{15,16}
- Reduced all-causes of mortality caused by cardiovascular and respiratory diseases¹⁷
- Better recognition of breast cancer, reduced frequency and mortality caused by colon and cervical cancer^{18,19,20}
- Fewer tests, higher patient satisfaction, less medication use, and lower care-related costs²¹.
- Reduced health discriminations, particularly for areas with the highest income inequality, including improved vision, more complete immunization, better blood pressure control, and better oral health^{22, 23, 24}

Thus family medicine is one of the primary medical care disciplines. Like internal medicine and pediatrics, it is a speciality of first contact with patients and works as an entry point for patients, into the health care system. Different studies have showed that in countries where family physicians rather than specialists provide first access to the health care system, health care costs are lower. In 1996, Forrest and Starfield suggested that ambulatory expenditures can be reduced up to 50% by this system of care²⁵. Greater patients satisfaction has also been found in systems where family physicians are first-contact providers.²⁶

Family Medicine Integrates Emergency Medicine:

Family Medicine and Emergency Medicine are the first contact services where 90% of population healthcare needs are provided²⁷. Common illnesses like infections, cerebro-vascular accidents, myocardial infarctions and road traffic injuries present in the acute form to the Emergency Departments (EDs).²⁸ However, these patients may also present to the family medicine clinics initially and are subsequently referred to Eds. During this process of shuttling between ED and family medicine clinic, patient care is compromised due to lack of coordination and integration of the services at most places. This results in duplication of investigations, treatment, and over and under diagnosis, with huge resource consumptions without fruitful outcomes. It seems very logical that with such terrible healthcare services and manpower crisis in Pakistan, we should aim for organized and systematic ways of movement of patient from ED to Family Medicine and vice versa.²⁹ In this way patients will more likely receive resource efficient (time, cost and manpower) care for all their health problems.

Family Medicine Committed to "Health for All":

Family medicine, however, is not restricted by age or sex and is devoted to providing comprehensive preventive, supportive and curative care with emphasis on the family unit including

the community and social environment. It is a discipline characterized by its breath, which squeezes knowledge content from all medical disciplines at a certain level and grasps it all together with the distinctive skills and attitudes required for providing person focused, extensive, primary health care for people in their own atmosphere, on a continuing care basis³⁰.

The family physician frequently interacts with people affected by chronic diseases^{31,32}. Pakistan is facing quadruple burden of problems like communicable diseases, non-communicable diseases, mental health problems and accidents / injuries.³³ This is an absolute fact that with growing chronic disease burden, the workload of all doctors is increasing. This combined with huge lack of resources in our country is resulting in major work related stress. This specialty was meant to properly tackle common problems of all the members of a family. These problems usually constitute about 80% of the health problems faced by people. The training of family medicine specialists was planned in a way to make them competent to independently tackle most of these common health issues and for the remainder uncommon issues they could arrange referrals to the concerned specialists.

Perception of Medical Student as a Career in Family Medicine:

Although family medicine is recognized as a specialty by the College of Physicians and Surgeons, Pakistan, up till now it is explained as a core subject in the undergraduate medical school curriculum, certified by the Pakistan Medical and Dental Council. Family medicine as a career choice is not on the priority list of many medical undergraduate students around the world.^{34,35} The reasons mentioned in different studies have been student's lack of awareness and interest in the subject and student's perceptions that it is a specialty with low prestige, money and personal growth.³⁶ The status of undergraduate training in family medicine seems to be an important factor that may influence student career choices in this primary care specialty. Very few Pakistani medical students select family medicine or general practice as their career of first choice. A study was conducted in Ziauddin Medical University Karachi has suggested that in career choice, clinical specialties were highly rated as compared to family medicine.³⁷

Factors Affecting the Choice of Family Medicine:

A number of studies conducted internationally have pointed the factors affecting the specialty preferences,³⁸ however, there is limited data available for Pakistani medical students.³⁹ As students learn new skills, acquire clinical exposure, gather knowledge and interact with consultants, residents, patients and fellow medical students, their ambition to progress forward in their profession brightens.⁴⁰ Some important factors identified while choosing a career were: life-style of clinical practice, salary, gender of the student, social issues they face and prestige related to certain specialties.

(1)-Gender: Various studies have found higher proportions of women than men choosing family medicine but none of the differences were statistically significant.⁴¹

(2)-Age: Two studies looking at age had contradictory results;

one study suggested that older age was associated with an interest in family medicine⁴² and the other suggested that there was no association of age with career choice in family medicine.⁴³

(3)-Socioeconomic background: Kassebaum in 1996 reported that parents' income over \$100,000 decreased the likelihood of plans for a family practice specialty⁴⁴ but there relation was observed among parent' education and career choice in family medicine.

(4)-Geographic Background: Since 1993, three studies have been conducted and all have found that rural background is more related to choose family medicine as a specialty⁴⁵

(5)-Morals and Awareness to family medicine on Entry to Medical College: Studies have provided some evidence that values on entry to medical school that are corresponding with a choice of family medicine are related to an ultimate choice of the specialty. Beliefs of high income in a medical career were negatively related to plans for family practice. Medical Students from those schools which produce low rate of primary care graduates were significantly less likely to found family medicine as a specialty than were students at a school with high rates of primary care graduates.⁴⁶

(6)-Career Aims on Entrance in Medical College: Preference for family medicine as a choice at the time of entry to medical college increased the chance of subsequent plans for family practice.⁴⁷ A decline in initial interest in family medicine was observed and documented by various studies⁴⁸ It is documented that interest of students at high school level is positively related to an eventual choice of family medicine. However preferences for a particular specialty develop considerably during the years of medical school. An important addition to the data available in 1995 is that there may not be any relationship between stated career intentions before admission to medical school and those indicated after admission⁴⁹

(7)-Type of practice: One study suggested that at matriculation level plans to practice in a rural setting or plans to practice in a socioeconomically deprived area were related to interest in family medicine.⁵⁰

(8)-Departmental Structure: Several studies found that existence of a department of family medicine increased the possibility of students planning a career in family medicine. However others did not find a relationship between departmental status and production of family medicine graduates⁵¹

(9)-Third- and Fourth-Year MBBS Curricula: There have been a number of studies examining third year MBBS students that supported the positive relationship between required time in family medicine and selection of family medicine as a specialty. One study have found lowered rates of students selecting family medicine if their internal medicine clerkship was ambulatory⁵²

(10)-Faculty Composition: The increasing proportion of clinical faculty who are family physicians is associated more with specialty choice of family medicine.

(11)-Faculty Role Models: A research conducted in 1999 suggested that having role models is related to specialty choice; positive role models should be important in specialty selection, negative role models were mentioned as a reason for moving away from family medicine⁵³

Family Medicine Rotation as Part of Undergraduate Curriculum:

In 2008, SHIFA College of Medicine introduced a two-week rotation in family medicine for their third-year medical students and a study was conducted over 46 students rotated in family medicine. Before starting their rotation only fifteen students were aware of family medicine as a specialty and only 3 showed an interest to pursue family medicine as a future career. At the start only 15 students were able to give correct definition of family medicine. On completion of rotation, a significant number of students that is 37% considered having a career in family practice and 80% were able to give correct definition of family medicine.⁵⁴ The results of this study are quite hopeful. The fact that students considered a career in family practice upon a short exposure to the subject reinforces the perception that family medicine needs to be consolidated as a permanent feature in Pakistani medical undergraduate curricula. In Pakistan some institutions like the Aga Khan University and Ziauddin Medical University have integrated family medicine into their curricula but this trend needs to establish in other medical colleges as well. The national need for Pakistan is for our graduates to practice as trained family physicians.⁵⁵ *For this family physicians are required as mentors and leaders in medical colleges, but this will be a challenge as there are very few institutions in our country which are recognized for providing an organized training program or a continuous professional development program for family physicians. The only examples are the Aga Khan University in Karachi and Fatima Memorial College in Lahore.*⁵⁶

Career Options for Family Physicians in Pakistan:

A lot of opportunities are available for future career options in the field of family medicine. These include clinical, academic, administrative and research fields. Clinical opportunities include private or group practice in ambulatory or hospital settings to provide primary health care delivery to patients of all ages. This could be at the primary or district level where properly trained physician are strongly needed. Academic opportunities include the teaching and expansion of family medicine. Pakistan Medical and Dental Council promotes training in family medicine at undergraduate level but lacks qualified teachers at present. With current needs, it is hoped that programs in family medicine will be established at medical schools throughout Pakistan. Mentors will be required for these programs and graduates would meet these needs. With the start of numerous medical and dental colleges in Pakistan, we have produced a total of 111,193 registered MBBS doctors till August, 2008, but only 21,048 doctors have registered in different specialities.⁵⁷ Almost three quarters

of the graduates entered into general practice armed solely with their undergraduate degree. Most of these graduates do not have a general approach in managing patients. They focus on symptomatic treatment of diseases, and although they may be filling a gap in our poor quality health care infrastructure but they create hazards in terms of polypharmacy and faults in judgment due to inadequate training^{58,59} Hence for enhancement of health care services in Pakistan, adequate primary services need to be established by trained family physicians with a proper referral system. Health care authorities should help and encourage advancement of family medicine as a specialty, and medical educators should construct a curriculum of family medicine and implement it in their respective institutions. At present with a shortage of trained family physicians in the country, very few could act as role models for their students and educate them about this field of medicine. At this time, all medical colleges need to introduce this subject in their undergraduate curriculum so that more students could gain an interest and would consider pursuing it as a future career. This could have a very positive influence on cost-effective delivery of health care in Pakistan.

REFERENCES:

1. Weisz G. The Emergence of Medical Specialization in the Nineteenth Century. *Bull Hist Med* 2003; 77 (3):536-74 doi:10.1353/bhm.0150.PMID 14523260.
2. Ramanayake J. Historical Evolution and Present Status of Family Medicine in Sri Lanka *Family Med Prim Care*. 2013 Apr-Jun; 2(2): 131-4
3. McWhinney IA. Text book of Family Medicine. In: The origin of family medicine. Boorstin DJ, Flexner A, editors. 1st edition. New York. Oxford University Press; 1989. p. 9-10
4. Henderson E, Berlin A, Fuller J. Attitude of medical students towards general practice and general practitioners. *Br J Gen Pract*. 2002; 52(478):359-63
5. Tandeter H, Granek-Catarivas M. Choosing primary care? Influences of medical school curricula on career pathways. *Isr Med Assoc J*. 2001;3(12):969-72
6. Right B, Brenneis F, Brett-MacLean P, McCaffrey L. Why would I choose a career in family medicine? Reflections of medical students at 3 universities. *Can Fam Physician*. 2007;53(11):1956-7
7. US Department of Health and Human Services;1980. annual report
8. The Joint Committee on Postgraduate Training for General Practice. Training for general practice,1983
9. Phillips WR1, Haynes DG .The domain of family practice: scope, role, and function. *Fam med*. 2001 Apr;33(4): 273-7
10. Aloysius DJ. The general practitioner in Sri Lanka. *Sri Lankan Family Physician*. 1985;24:119
11. Shah N , Ashraf H , Anwar F , Khan A , Akhtar H, Abro MA .Status of Postgraduate Training and Continuing Medical Education of Family Physicians in Pakistan. *Pak J Med Sci* January - March 2012; 28(1):4-8
12. Zuberi, R. W. Family medicine: a brief review of its history and concepts and its relevance to Pakistan. *Journal of Pakistan Medical Association*, 1993; 43(5): 102-6
13. Phillips RL, Starfield B. Editorial: Why does a U.S. primary care physician workforce crisis matter? *American Family Physician* 2003;15:68(8):1494-1500. Reprinted: *American Family Physician* 2004; 70(3): 440-6
14. Bindman AB, Grumbach K, Osmond D, Vranizan K, Stewart AL. Primary care and receipt of preventive services. *J Gen Intern Med* 1996;11:269-76.
15. Dietrich AJ, Goldberg H. Preventive content of adult primary care: do generalists and subspecialists differ? *Am J Public Health* 1984;74:223-7.
16. Bindman AB, Grumbach K, Osmond D, Komaromy M, Vranizan K, Luri N, et al. Preventable hospitalizations and access to health care. *JAMA* 1995; 274:305-11.
17. Wasson JH, Sauvigne AE, Mogielnicki RP, Frey WG, Sox CH, Gaudette C, et al. Continuity of outpatient medical care in elderly men. A randomized trial. *JAMA* 1984;252:2413-7.
18. Macinko J, Starfield B, Shi L. The contribution of primary care systems to health outcomes within Organization for Economic Cooperation and Development(OECD) countries, 1970-1998. *Health Serv Res* 2003;38:831-65.
19. Ferrante JM, Gonzales EC, Pal N, Roetzheim RG. Effects of physician supply on early detection of breast cancer. *J Am Board Fam Pract* 2000;13:408-14.
20. Campbell RJ, Ramirez AM, Perez K, Roetzheim RG. Cervical cancer rates and the supply of primary care physicians in Florida. *Fam Med* 2003;35: 60-4.
21. Roetzheim RG, Gonzalez EC, Ramirez A, Campbell R, van Durme DJ. Primary care physician supply and colorectal cancer. *J Fam Pract* 2001;50:1027-31.
22. Greenfield S, Nelson EC, Zubkoff M, Manning W, Rogers W, Kravits RL, et al. Variations in resource utilization among medical specialties and systems of care. Results from the medical outcomes study. *JAMA* 1992;267: 1624-30.
23. Shi L, Starfield B, Politzer R, Regan J. Primary care, self-rated health, and reductions in social disparities in health. *Health Serv Res* 2002;37:529-50.
24. Lohr KN, Brook RH, Kamberg CJ, Goldberg GA, Leibowitz A, Keesey J, et al. Use of medical care in the Rand Health Insurance Experiment. Diagnosis- and service-specific analyses in a randomized controlled trial. *Med Care* 1986;24(suppl 9):S1-87.
25. Shi L, Starfield B. The effect of primary care physician supply and income inequality on mortality among blacks and whites in U.S. metropolitan areas. *Am J Public Health* 2001;91:1246-50.
26. Forrest CB, Starfield B. The effect of first-contact care with primary care clinicians on ambulatory health care expenditures. *J Fam Pract*. 1996 Jul;43(1):40-8.
27. Rosser WW, Approach to diagnosis by primary care clinicians and specialists: is there a difference?. *Fam Pract*. 1996; 42(2):139-44

28. Green LA, Fryer GEJ, Yawn BP, Lanier D, Dovey SM. The ecology of medical care revisited. *N Engl J Med* 2001; 344:2021-5
29. Shahid M, Razzak J, Jamali S, Ali SS, Ayubi TK. Initial diagnostic categories of patients presenting to four major emergency departments in Karachi. *J Coll Physicians Surg Pak* 2006; 16:680 -1.
30. Starfield B. *Primary Care: Balancing Health Needs, Services and Technology*. Rev. ed. New York, NY: Oxford University Press; 1998.
31. Karunarathna LA. General practice as a specialty in Sri Lanka. *Sri Lankan Fam Physician*. 1986;9:19–25
32. Broemeling A, Watson D, Prebtani F: Population patterns of chronic health conditions, co-morbidity and healthcare use in Canada: implication for policy and practices. *Healthcare Quarterly* 2008;11:70-6.
33. Starfield B, Lemke KW, Bernhardt T, Foldes SS, Forrest CB, Weiner JP: Comorbidity: implications for the importance of primary care in 'case' management. *Ann Fam Med* 2003; 1(1):8-14.
34. Bindman AB, Grumbach K, Osmond D, Komaromy M, Vranizan K, Luri N, et al. Preventable hospitalizations and access to health care. *JAMA* 1995; 274:305-11.
35. 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.
36. Mariolis A, Mihas C, Alevizos A, Gizlis V, Mariolis T, Marayiannis K, et al. General practice as a career choice among undergraduate medical students in Greece. *BMC Medical Education* 2007;7:15
37. Pugno PA, Schmittling GT, McGaha AL, Kahn NB. Jr. Entry of US medical school graduates into family medicine residencies: 2005–2006 and 3-year summary. *Fam Med*. 2006;38(9):626–36.
38. Huda N, Yousuf S. Career preference of final year medical students of Ziauddin Medical University. *Educ Health (Abingdon)* 2006; 19: 345-53.
39. Khader Y, Al-Zoubi D, Amarin Z, Alkafagei A, Khasawneh M, Burgan S, et al. Factors affecting medical students in formulating their specialty preferences in Jordan. *BMC Med Educ* 2008;8:32.
40. Syed EU, Siddiqi MN, Dogar I, Hamrani MM, Yousafzai AW, Zuberi S. Attitudes of Pakistani medical students towards psychiatry as a prospective career: a survey. *Acad Psychiatry* 2008; 32: 160-4.
41. Apker J, Eggly S. Communicating professional identity in medical socialization: considering the ideological discourse of morning report. *Qual Health Res* 2004; 14: 411-29.
42. Bickel J, Ruffin A. Gender-associated differences in matriculating and graduating medical students. *Acad Med* 1995; 70: 552–9
43. Bowman M, Haynes RA, Rivo ML, Killian CD, Davis H. Characteristics of medical students by level of interest in primary care. *Fam Med* 1996; 28: 713–9.
44. Xu G, Veloski JJ, Barzansky B. Comparisons between older and usual-aged medical school graduates on the factors influencing their choices of primary care specialties. *Acad Med* 1997; 72:1003–7.
45. Kassebaum DG, Szenas PL, Schuchert MK. Determinants of the generalist career intentions of 1995 graduating medical students. *Acad Med* 1996; 71: 197–209.
46. Senf JH, Campos-Outcalt D, Watkins AJ, Bastacky S, Killian C. A systematic analysis of how medical school characteristics relate to graduates' choices of primary care specialties. *Acad Med* 1997; 72: 524–74
47. Grayson MS, Newton DA, Whitley TW. First-year medical students' knowledge of and attitudes toward primary care careers. *Fam Med* 1996; 28: 337–42.
48. Colquitt WL, Zeh MC, Killian CD, Cultice JM. Effect of debt on U. S. medical school graduates' preferences for family medicine, general internal medicine, and general pediatrics. *Acad Med* 1996; 71: 399–411.
49. Schafer S, Shore W, French L, Tovar J, Hughes S, Hearst N. Rejecting family practice: why medical students switch to other specialties. *Fam Med* 2000; 32: 320–5.
50. Xu G, Hojat M, Brigham TP, Veloski JJ. Factors associated with changing levels of interest in primary care during medical school. *Acad Med* 1999; 74: 1011–5.
51. Bowman M, Haynes RA, Rivo ML, Killian CD, Davis H. Characteristics of medical students by level of interest in primary care. *Fam Med* 1996; 28: 713–9
52. Campos-Outcalt D, Senf J. A longitudinal, national study of the effect of implementing a required third-year family practice clerkship or a department of family medicine on the selection of family medicine by medical students. *Acad Med* 1999; 74: 1016–20.
53. Bauer RL, Venkatachalam HM, Forrester RH, Harris GD, Diehl AK. The effect of an ambulatory internal medicine rotation on students' career choices. *Acad Med* 1997; 72: 147–9.
54. Xu G, Hojat M, Brigham TP, Veloski JJ. Factors associated with changing levels of interest in primary care during medical school. *Acad Med* 1999; 74: 1011–5.
55. Saima P. Iqbal. 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
56. Jafarey NA. Changing role of medical college teachers. *J Pak Med Assoc* 2006;56:297–8.
57. Biggs J. Postgraduate Medical Training in Pakistan: Observations and recommendations. *J Coll Physicians Surg Pak* 2008;18(1):58–63.
58. Number of doctors/Dental surgeons Available from URL: <http://www.pmdc.org.pk/Statistics/tabid/103/Default.aspx> Accessed Nov 28th 2010.
59. Jafar TH, Jessani S, Jafary FH, Ishaq M, Orakzai R, Orakzai S, et al. General practitioners' approach to hypertension in Pakistan: disturbing trend in practice. *Circulation* 2005;111:1278–83.