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Factors Influencing Career Choices among Medical Students in Ayub Medical College, Abbottabad

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Abstract

Background: Choosing a medical specialty can be either a daunting and confusing experience for some medical students and junior doctors or a foregone conclusion to others. The aim of this study is to evaluate factors influencing career choices among medical students in Ayub Medical College (AMC) Abbottabad, KPK, Pakistan.

Materials and Methods: It was a descriptive type cross sectional study carried out at AMC Abbottabad for a period of 8 months from 1st March, 2022 to 31st October, 2022 on 100 students. Study population was Medical students of AMC Abbottabad. A questionnaire was developed for data collection after review of literature. The data was analyzed through computer using SPSS version 20.0. Mean and standard deviation was calculated for continuous variables and frequencies and percentages for categorical variables.

Results: In this study students from all classes from first to final year MBBS were included. Out of 100 students, 52 (52%) were males and 48 (48%) were females. In this study we assessed that about 30% medical students were unsure about their future specialty decision, 29% students have broad area decision, 23% students have specific area decided upon while 12% students currently considering two broad areas. Moreover 41% students have not yet decided their future broad area for specialty, 35% students decided during their clinical years (3rd, 4th and final year), 12% students had decided during their pre-clinical years (1st and 2nd year) and 12% students had decided prior to medical college. According to our study, the most important factor which influence career choice among medical students is personal interest 49%, followed by lifestyle 15%, future job opportunities 14%, 7% influence from a mentor, 5% previous positive clerkship experience and 4% have other personal reasons.

Conclusion: A variety of factors appeared to inspire medical students in AMC Abbottabad to choose a future career choice. When identified, these factors can be used by mentors of medical students and directors of residency training programs to motivate students to choose specialties that are limited in the country and therefore better serve the community.

Keywords: Career choice, Medical students, Future specialty

Introduction

The projection for future health professionals can be met based on the career interest of the present undergraduate medical students who are pursuing their MBBS degree [1]. At the beginning of medical school, many students have vague images and misconceptions of the medical profession. Even for those with a strong preference at the start of medical school, career preference is subject to changes during undergraduate training [2].

Choosing a postgraduate career path is an important choice that is often difficult to reverse once in residency training. Whether one chooses a specific specialty due to advice from friends or family, admiration of a certain mentor or genuine interest in the specialty, there are many incentives and factors that converge to result in the final decision [3]. While motivations do vary according to specialties, they may include lifestyle choices, a possibility of private practice, an interest in specific diseases, a varied scope of practice, an interest in research and teaching, or to gain a higher income [4]. Specialty choice is the product of a complex interconnection of student expectation, department expectation and competition for available spots, and student choice is where the choice begins. The essential feature of selecting the specialties is the process of personal choice while there can be economic forces, social expectations, training opportunities and educational experiences exert indirect effect on each individual's specialty preference [5].

Previous studies have suggested that medical students

choice of subspecialty is essential to the maintenance of an adequate medical workforce and a balanced development of the medical system [6]. With the continuing evolution of health care delivery and with advances in medical technology, the appropriate specialty mix within the medical workforce is still debated. Studying career preference can help provide important information to aid in planning educational programs, set priorities, and plan for the provision of adequate healthcare [7]. The preference of medical specialties chosen by medical graduates plays an important part in the future work force in health-care system, especially in times of over or undersupply of doctors [7].

After medical school, most graduates start residency training. Switching specialty careers during or after post-Graduate training is usually difficult and often causes financial and emotional stress for residents [8]. To change or quit a residency is, therefore, unusual among residents [9]. This puts pressure on students to choose the right specialty for a life-time career. The decision, in turn, has a significant impact on career satisfaction and personal well-being later in life [10].

Career Specialty choice is not only crucial for the individual but also for society at large, as populations must be served with an adequate mix of medical specialties. Medical students generally determine career preferences without attending to society needs. Some specialties suffer because they cannot attract enough graduates. A skewed distribution of graduates across the specialties leads to shortages in some specialties and competition in others [11]. Guidance in making the best suitable career choice should, therefore, be part of the medical education, and from this point of view, career preference dynamics are a relevant object of study in medical education.

Being worried for future career every time and mental stress from parents, friends and society can affect medical student performance which can harm their future life as medical practitioner and can affect the health care system. The aim of this study was to determine the factors affecting career choices among the students of Ayub Medical College. This study can provide the students a better understanding of various factors affecting career choice in students of Ayub Medical College and help to make it easier for students to handle different factors.

Literature Review

The preference of medical specialties chosen by medical students plays an important part in the future work force in health-care system, especially in times of over or undersupply of doctors. Kiolbassa et al. [12] conducted a study to identify factors influencing medical students specialty choice laying a special focus on general practice among the medical students of five medical schools in Germany in 2010. The study was designed as a cross-sectional survey. Students filled out an online-questionnaire. 1,299 students participated in the survey. 1,114 students stated a current choice for a specialty, With 708 students choosing a career in one of the following 6 specialties: internal medicine, surgery, gynecology and obstetrics, pediatrics, anesthetics and general practice. Overall, individual aspects ('Personal ambition', Future Perspective', Work-life balance') were rated as more important than occupational aspects (i.e. Variety in job', Job-related ambition') for career choice. His study confirms that future general practitioners (GPs) differ from students intending to choose other specialties particularly in terms of patient-orientation and individual aspects such as personal ambition, future perspective and Work-life balance. Improving job-conditions in terms of family compatibility and work-life balance could help to increase the attractiveness of general paractise [12].

Ruban Anand et al. [13] conducted a study to identify the motivational factors and demographic variables influencing the career preferences among medical students of Christian medical college and interns in India. He conducted a questionnaire-based survey, the participants were 368 of the 460 medical students and interns enrolled at the institution from October 2015 to August 2016.Of the 368 respondents, 356 (96.7%) expressed their intention to pursue a residency program after the MBBS program, and about two-thirds indicated their preference to do so in India. The specialties most preferred by students were general surgery, general medicine (internal medicine), and pediatrics, while the least preferred were anatomy, obstetrics and gynecology, and community medicine. Factor analysis yielded three motivational factors, which he named personal growth,' professional growth,' and personal satisfaction' based on the items loaded in each. This study provides insights into the motivational factors that influence the career preferences of Indian medical students and interns [13].

Rawan Al-Fouzan et al. [14] conducted a study to evaluate factors affecting future specialty choice among medical students in Kuwait University. He used a self-administered questionnaire to collect data from medical students registered in Kuwait University during the academic year 2011/2012. Of the 422 students approached, 387 (91.7%) decided to participate. A total of 144 (37.2%) students made a decision regarding their choice of future medical specialty. Pediatrics, general surgery, and cardiology were the most desired specialties – 18 (12.5%), 17 (11.8%), and 16 (11.1%) students requested these specialties respectively. Only 61 (42.4%) of those who selected a future specialty received advice regarding their choice. Looking for a good treatment outcome for patients (66; 45.8%) and a challenging specialty (58; 40.3%) were the most influencing incentives when selecting a future specialty. A variety of factors appeared to inspire medical students in Kuwait to choose a future medical specialty. When identified, these factors can be used by mentors of medical students and directors of residency training programs to motivate students to choose specialties that are limited in Kuwait [14].

Arun Kumar et al. [15] conducted a study to find out future career interest and factors that influence undergraduate medical students to choose their future specialization among 1st year medical students from five countries. The students were asked to complete an 8-item questionnaire. 2153 participants were enrolled in the

study. Of the 2153 participants, only 1470 responded. Among the 1470 participants, 169 Participants were excluded due to the ambiguity in responses, finally making it to 1301 participants. Among them, Anatomy (49.3%) followed By Biochemistry (26.7%) and Physiology (24%) were the most preferred subjects. Anatomy was the most preferred basic science subject among the other subjects and the students were interested to pursuing surgery in future. Furthermore, the most preferred future specialties were surgery, internal medicine and pediatrics with gender variations; males preferring surgery and females in obstetrics and gynecology [15].

Rajeew Kumar et al. [16] have studied the many factors influence the career choices of undergraduate medical students. They sought to identify the career Choices of medical students in an Indian medical college and what influenced these choices. They conducted a questionnaire-based cross-sectional Survey. The sociodemographic data, first choice of career on the day of the questionnaire and rating of 34 factors influencing choices were recorded. 282 questionnaires were analyzed. The most preferred career choices were medicine and Surgery, followed by orthopedics; 3 students each choose obstetrics and gynecology, and anesthesia; none choose community Medicine. Significantly, senior students were disinclined to take up surgery (p=0.003), preferring orthopedics instead (p=0.017). Personal interest was rated by 80% of students as important in influencing their choice, Followed by stability (58%), reputation of the specialty (56%) and lifestyle (55%) [16].

Chellappah & Garnham [17] conducted a study about the current issue of general practice recruitment is a significant challenge and concern. They used a questionnaire base study to examine these attitudes across all years at Imperial College Medical School and to understand what a group of London medical students' current intended career choices were. They found that only 13% of students Ranked general practice as their first choice career choice. They highlighted that the main influence on future career choice was interest in the specific specialty and that lifestyle factors did not seem to be so important. Exposure to general practice, primary care research and student GP societies might play some part in increasing interest, but more work is needed to understand why students are rejecting general practice and what we can do collectively to attract students into choosing a career in primary care [17].

Querido et al. [18] conducted a study to gain insight into factors affecting career preference and career choice during the final phase of medical school. He conducted a qualitative study. He conducted one-hour semi-structured interviews with final-year Medical students about career preference and the factors Influencing preference and choice. Twenty-four students participated. Three critical sets of factors, emerged from the interviews: (a) factors arising from student-initiated information collection, (b) patient population characteristics of a specialty domain, and (c) the characteristics of teams and colleagues within a specialty. Students appear to actively match and calibrate perceptions of different specialty characteristics with their current personal needs and expected future needs. Next, specialty patient population features appear to be taken into account; this was not unexpected but the characteristics of teams and colleagues of a specialty were stressed in the interviews. These three components broaden the applicability of The Bland model—originally created for primary-care careers—to medical specialties in general [18].

Alawad et al. [19] observed that medical students are the source of a country's physicians. The objective of his study is to identify the number of medical students who have decided their postgraduate specialty career, their career specialties preference, and factors that may influence their decision to select a particular specialty. A facility based cross-sectional study was conducted in September 2013 at faculty of Medicine, University of Medical Sciences and Technology, Khartoum, Sudan. He distributed a self-administered semi-structured questionnaire to 887 male and female students, (from first to fifth academic Years) recruited in the study. Response rate was 73% with 647 questionnaires collected, out of 887 eligible medical students. Of the Returned questionnaires, 604 were valid. The majority of students (541, 89.6%) have chosen a specialty. Surgery, medicine, pediatrics and Obstetrics and gynecology were the most selected specialties. The least selected specialty was anesthesia. The most common reason for choosing a specific specialty was Personal Interest (215, 39.7%) followed by being Helpful to the Community (144, 26.6%). Surgery, medicine, pediatrics and obstetrics and gynecology were the most selected specialties [19].

Sarikhani et al. [20] has studied that medical specialty selection is a complex phenomenon that can affect the performance of health systems, community health, and physicians. He carried out a systematic search on six online databases from January 2000 to May 2020. He synthesized the data using a quantitative content analysis approach. The analysis led to the development of five main themes, including personal determinants, life fulfillment. Aspects, influential career aspects, educational determinants, and interpersonal effects. Moreover, the most frequent subthemes were specific personal factors, controllable lifestyle, quality of working life, and future working conditions. In order to support physician workforce policy with more precise evidence, it is necessary to explore the weight and ranking of these factors based on the socioeconomic contexts of the countries [20].

Abdulghani et al. [21] conducted a study to identify the number of undergraduate medical students who decided their post-graduate specialty career, factors that may influence their decision to select a particular specialty, and their career specialties preference. He used a self administered questionnaire to achieve the objectives. Less than half of the students (40.2%) showed a future specialty preference. Senior students and having background about specialties were the significant factors for career choices. General Surgery (27.4%), ENT-Ophthalmology (24.6%) and Internal Medicine (22%)

were preferred specialties. Male students preferred General Surgery (15.7%), Internal Medicine (15%), ENT-Ophthalmology (12%) and Orthopedics (9.1%). Female students showed interest in ENT-Ophthalmology (12.1%), Surgery (11.7%), Pediatrics (10.8%) and Dermatology (8.2%). The least popular specialties were Community Medicine (6.6%), Anesthesia (6%) and Forensic Medicine (4.6%). Obstetrics and Gynecology (Obs/Gynea) was a less popular branch even in female students. He concluded that proper information and counseling should be offered to students about the challenges and opportunities to select their future careers [21].

Khader et al. [22] carried out this study to investigate the career preferences of medical students at Jordan University of Science and Technology and determined factors that might influence their career decisions. He carried out a cross-sectional questionnaire-based survey among second, fourth and sixth year Medical students at the Jordan University of Science and Technology, Irbid, Jordan during the academic year 2006/2007. A total of 440 students answered the questionnaire which covered demographic characteristics, specialty preferences, and the factors that influenced these career preferences. Students were asked to consider 14 specialty options and select the most preferred career preference. The most preferred specialty expressed by male students was surgery, followed by internal medicine and orthopedics, while the specialty most preferred by female students was obstetrics and gynecology, followed by pediatrics and surgery. Students showed little interest in orthopedics, ophthalmology, and dermatology. While 3.1% of females expressed interest in anesthesiology, no male students did. Intellectual content of the specialty and the individual's competencies were the most influential on their Preference of specialty. Other influential factors were the reputation of the specialty, anticipated income and focus on urgent care [22].

Hinko et al. [23] aimed to determine which factors influenced career choices made by medical students, residents, and practicing physicians, he conducted a survey in 2005. Between April and July 2005 he distributed 327 questionnaires to University of British Columbia medical students, residents, and physicians. Of those asked to complete a questionnaire, 118 (36%) responded. This group included 35 students, 44 residents, and 39 physicians. In the subgroup of students, 10 (29%) ranked family medicine as their first choice of a future career. Personal Interests and previous experiences were identified as most influential in this career choice. Respondents with Mentorship experience considered this more influential than those without such experience (P = .008). While physicians appreciated mentorship more than students (P = .02478). Results of this study suggest that increasing primary care exposure during training and selecting students interested in primary care might be ways to increase the number of primary care physicians [23].

Objectives

1. To determine frequency of students in all years who have decided preference about future specialties.
2. To determine the order of different factors affecting career choices.

Materials and Methods

Study design and setting

The study was a Descriptive Cross-sectional design conducted at Ayub Medical College, Abbottabad, over a period of 8 months, from 1st March 2021 to 31st October 2021. The study population consisted of students enrolled in the MBBS program at Ayub Medical College, selected using a non-probability convenience sampling technique. A calculated sample size of 100 was included in the study.

Selection criteria

The inclusion criteria were all students of either gender enrolled in the MBBS program, while the exclusion criteria were students not enrolled, those who did not give informed consent, and students absent due to illness or other reasons.

Operational definition

The operational definition of "career choice" in this research was the intention of a student to join a future specialty, which was categorized into broad and specific areas.

Data collection

Data collection was carried out using a structured questionnaire developed after a thorough literature review. Students were approached in lecture halls, courtyards, and hostels, with verbal consent obtained before administering the questionnaire.

Statistical analysis

Data analysis was performed using SPSS version 20.0. Descriptive analysis for continuous variables (e.g., parent's occupation, presence of a doctor in the family, and decision on future specialty) was presented using mean and standard deviation, while frequencies and percentages were used for categorical variables (e.g., gender, class, admission type, residence, and factors influencing career choice). Inferential analysis, including Chi-square tests, was employed to determine associations between socio-demographic variables and factors influencing career choice, with a significance level set at $p \leq 0.05$. Data were presented in the form of tables.

Informed consent

Informed consent has been obtained from all individuals included in this study.

Ethical approval

The research related to human use has been complied with all relevant national regulations, institutional policies and in accordance with the tenets of the Helsinki Declaration, and has been approved by the Institutional Review Board of Ayub Medical College, Abbottabad.

Results

The demographic characteristics of the participants show that the sample is nearly evenly split by gender, with 52% male and 48% female. The overwhelming majority of students (97%) were admitted on open merit, while only

3% were self-financed. Regarding parental occupations, most fathers (93%) are in non-medical fields, and all mothers (100%) are also in non-medical fields. In terms of residence, 46% of participants come from urban areas, 28% from semi-urban, and 26% from rural areas. Half of the participants (52%) have no doctors in their family, while the remaining 48% have other doctors in the family as shown in Table 1.

Table 1: Demographic Characteristics

Characteristic	Category	Frequency	Percent
Gender	Male	52	52
	Female	48	48
Admission Type	Open Merit	97	97
	Self-Finance	3	3
Father's Occupation	Medical/Health Related	7	7
	Non-Medical Related	93	93
Mother's Occupation	Non-Medical Related	100	100
Residence	Urban	46	46
	Semi-Urban	28	28
	Rural	26	26
Doctors in Family (Other than Parents)	No	52	52
	Yes	48	48

Regarding career decisions, 29% of participants have decided on a broad area of specialty, 23% on a specific area, and 6% have decided on some area. However, 30% are still unsure of their future specialty. When it comes to the timing of this decision, 41% have not made a decision yet, while 12% made their choice prior to medical school, another 12% decided during the pre-clinical years (1st-2nd year), and 35% made their decision during the clinical years (3rd to final year). A significant portion of the sample (68%) has not changed their mind about their specialty, while 32% have (Table 2).

Table 2: Career Decision Factors

Characteristic	Category	Frequency	Percent
Decision on Future Specialty	Broad area decided	29	29
	Specific area decided	23	23
	Some area	6	6
	Considering two broad areas	12	12
	Unsure	30	30
Timing of Decision on Future Specialty	Have not decided yet	41	41
	Prior to medical school	12	12
	Pre-clinical years (1st-2nd year)	12	12
	Clinical years (3rd-Final year)	35	35
Changed Mind About Specialty	No	68	68
	Yes	32	32

In terms of plans for further education, 68% of participants intend to go abroad for further qualifications, while 32% do not. When asked about factors influencing their career choice, 49% are primarily influenced by personal interest, 15% by lifestyle and financial rewards, and 14% by future job opportunities. Fewer participants are influenced by previous clerkship experience (5%), mentors (7%), or family members in the field (6%), as shown in Table 3.

Table 3: Career Influences and Future Plans

Characteristic	Category	Frequency	Percent
Intention to Go Abroad for Further Qualification	No	32	32
	Yes	68	68
Factors Influencing Career Choice	Personal Interest	49	49
	Lifestyle and Financial Reward	15	15
	Previous Clerkship Experience	5	5

	Future Job Opportunities	14	14
	Influence from a Mentor	7	7
	Family Member in the Field	6	6

Discussion

This study was conducted to assess the future choices among the students of Ayub Medical College Abbottabad and to determine the factors influencing these choices. According to our study, The most important factor which influence career choice among medical students is personal interest 49%, followed by lifestyle 15% , future job opportunities 14% , 7% influence from a mentor, 5% previous positive clerkship experience, 6% due to family member in the field and 4% have other personal reasons.

According to the result of our study, the factors which influence career choice of most of the students (49%) was Personal interest. They thought that they might be personally fit to one Specialty than the other. Chew et al. [24] conducted the same study among medical students in Singapore and concluded that personal interest might be the most important influencing factor among the students in choosing future career. Therefore, greater effort should be made to help medical students explore their interest in and suitability for a particular specialty. These include giving medical students earlier exposure, encouraging participation in student interest groups and using appropriate personality tests for career guidance [24]. Osborn et al. [25] conducted the same study among Canadian medical students and concluded that 45% students have choose personal choice as their most influencing factor. He concluded that Medical students can be encouraged to explore a career in less chosen facilities like public health by addressing misinformation, by encouraging realistic expectations of career outcomes in the various specialties, and by demonstrating the capacity of primary care fields to incorporate specific motivating factors [25].

In our study the second most influencing factor was life style. According to our study 15 (15%) students thought that life style of some Specialties is more interesting and convenient than the others. Azizzadeh et al. [26] conducted a study and concluded that concerned about lifestyle and work hours during residency and perceived quality of patient/physician relationships were deterrents to life style as a top factor influencing career choice of medical students. These issues may need to be addressed to increase the number of applicants to certain specialties [26]. Grigg et al. [27] conducted a study among Australian medical students and concluded the life style as the most Influencing factor on career choice. According to their study the Lifestyle factors were the main reason influencing medical student‘s career choices. A balance between work, family and lifestyle was found to be important. In particular, female students placed more importance on family and lifestyle factors when opting for future careers [27].

The third most influencing factor in our study was future job opportunities. 14 (14%) students select this as their topmost influencing factor. Boracci RA et al conducted a study among Argentine medical students to observe the future job opportunities effect on students career choice. According to their study only 21.5% of respondents considered that medical schools encourage the practice of medicine in poor deprived regions. Likewise, only 6.2% of students considered that national public health authorities suitably stimulate physician distribution in poorer districts. Since most respondents said that neither government nor medical schools sufficiently encourage the practice of medicine in poor deprived regions, government policymakers should recommend changes in resource allocation to better promote official proposals and opportunities to work in poor regions.

After assessing this study it can be found out that personal interest was far more important than income in deciding future career choice. In our study, personal interest was the top ranked influencing factor (49%) of career choice. Students may tend to avoid choosing these some specialties due to their personal interest, thus worsening the Imbalance in the medical workforce. Hence, to Reduce the risk that students are restricted to specific facilities of their personal interest due to a lack of personal skills, medical education should focus more on enhancing students‘ personal competencies in addition to their Academic interests.

Recommendations

Proper counseling, better planning and support should be provided to help the students to choose better future career choice. The authorities should identify the factors that affect students’ career choice most and take an active role to empower the students about their preference to improve their performance. A robust longitudinal study is required to study intra-individual variations in preferences and the persistence of choices among students. These factors can be used by mentors of medical students and directors of residency training Programs to motivate students to choose specialties that are scarce in country and therefore better serve the national community.

Limitations

The sample of our study was medical students of AMC only, which does not represent all medical students of other medical colleges. The sample size was so small, containing only 100 students of AMC, it was because of shortage of time. Due to shortage of time we were not able to collect complete and enough data from each and every student.

Conclusion

A variety of factors appear to inspire medical students of Ayub Medical College Abbottabad to choose a future medical career. The study also noticed that the majority of students had not decided their future career choice, which was possibly due to lack of awareness or clinical exposure. On the basis of the present study findings, it can be suggested that orientation and career counseling at

different stages in medical education may help students and future doctors to choose their future choice for long medical careers as well as community healthcare needs. Intervention to influence Career preference should be target in the period of clinical training.

Conflict of interest

The authors state no conflict of interest.

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: SA, SUR
Acquisition, analysis, or interpretation of data: SU, FA
Drafting of the manuscript: SUR, SU, FA
Critical review of the manuscript for important intellectual content: SA
Supervision: SA

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