Comparison of Changes in Speciality Choices and Future Career Plans between Public and Private Medical Students Over Five Years of Medical Studies

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ABSTRACT

This study aimed to compare medical students' satisfaction with their choice of the medical field in their fifth year to their first year of MBBS and to compare speciality choices and career plans between public and private medical students. It was an online survey conducted from December 2020 to April 2021. Two consecutive classes of final-year medical students from five medical schools (2 public and 3 private) were included. They were asked about their satisfaction with the medical profession, intentions to practice abroad, intended speciality, and career plans in the final year and the first year of medical school *via* a 24-item semi-structured pre-piloted questionnaire. Of 468 responses (34.41% response rate), 331 (70.7%) were females. There was a significant change (p = 0.002) in the intention of students to practice abroad, however, no significant change (p=0.11) in their satisfaction with the medical profession was observed.

Key Words: *Career choices, Medical students, Medical schools, Personal satisfaction, Pakistan.*

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Due to an increase in the global population, the need for medical doctors has also risen. Pakistan is the world's 5th most populous country and faces the challenges of the shortage of doctors, especially in remote areas. Traditionally, most medical students graduated from public medical schools, but now the private sector is playing a significant role in producing medical doctors in Pakistan. The background of private medical school students is different from those of public medical schools. Mostly, private medical students belong to financially affording families who can pay for expensive medical education and hence, their financial background may influence their aims and future career plans compared with those of public medical students. Also, it has been observed that some medical students prefer not to pursue their medical profession as a career.[1] So, this change in career plans through the 5-year journey of a medical student needs to be investigated.

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A recent study from Pakistan determined future speciality choices and factors affecting these choices among medical students.[2] However, the data on future non-medical career choices among the students are scarce. Also, there are limited data available on the change in medical students' career plans as they progress in their medical school and gain more knowledge about the profession. This study determines the change in the satisfaction level of medical students for choosing the medical field and "intention to practice abroad" among medical students over the 5-year medical school. It also compares changes in intended speciality choices and career plans among public and private medical students during medical studies.

Two consecutive classes of final-year MBBS students (graduating in 2020 and admitting in 2021) were sent an online 24-item self-administered questionnaire. The questionnaire was taken from a previously published study[3] and was piloted among the students. Then the questionnaire was amended, and a final questionnaire was prepared. This questionnaire was shared with medical students of two public (Khyber Girls Medical College and Khyber Medical College) and three private medical schools (Pak International Medical College, Peshawar Medical College and Rehman Medical College) in Peshawar, Pakistan.

Table I: Demographics of study participants.

Characteristics		Public Medical Students (n=264)	Pvt. Medical Students (n=204)
Mean age in years (SD)		23.27 (1.07)	23.27 (2.67)
Gender, n (%)	Male, 137 (29.3)	37 (14)	100 (49)
	Female, 331 (70.7)	227 (86)	104 (51)
Nationality, n (%)	Pakistan, 447 (95.51)	243 (92)	204 (100)
	Afghanistan, 4 (0.85)	4 (1.5)	0 (0)
	United Kingdom, 8 (1.71)	8 (3)	0 (0)
	USA, 4 (0.85)	4 (1.5)	0 (0)
	Canada, 3 (0.64)	3 (1.1)	0 (0)
	Russia, 2 (0.43)	2 (0.8)	0 (0)
Secondary education, n (%)	Govt. Day School, 85 (18.16)	60 (22.7)	25 (12.3)
	Govt. Boarding School, 10 (2.14)	6 (2.3)	4 (2)
	Pvt. Day School, 338 (72.22)	185 (70.1)	153 (75)
	Pvt. Boarding School, 28 (5.98)	8 (3)	20 (9.8)
	Mission School, 7 (1.5)	5 (1.9)	2 (1)
Intermediate education, n (%)	Govt. Day School, 159 (33.97)	94 (35.6)	65 (31.9)
	Govt. Boarding School, 67 (14.32)	47 (17.8)	20 (9.8)
	Pvt. Day School, 202 (43.16)	110 (41.7)	92 (45.1)
	Pvt. Boarding School, 37 (7.91)	12 (4.5)	25 (12.3)
	Mission School, 3 (0.64)	1 (0.4)	2 (1)
Certificate / degree before medical school, n (%)	FSc. (Premedical), 429 (91.67)	242 (91.7)	187 (91.7)
	A-levels, 30 (6.41)	17 (6.4)	13 (6.4)
	BSc., 6 (1.28)	3 (1.1)	3 (1.5)
	High School, 4 (0.85)	3 (1.1)	1 (0.5)
Parents' occupation, n (%)			
Father	Accountant/Banker, 26 (5.55)	17 (6.4)	9 (4.4)
	Armed Forces/Police, 32 (6.84)	21 (8)	11 (5.4)
	Businessman, 106 (22.65)	51 (19.3)	55 (27)
	Deceased, 19 (4.06)	9 (3.4)	10 (4.9)
	Medical Doctor, 88 (18.8)	37 (14)	51 (25)
	Doesn't work, 14 (3)	9 (3.4)	5 (2.5)
	Engineer, 55 (11.75)	33 (12.5)	22 (10.8)
	Farmer, 5 (1.07)	4 (1.5)	1(0.5)
	Landlord, 10 (2.14)	5 (1.9)	5 (2.5)
	Lawyer/Judge, 12 (2.56)	5 (1.9)	7 (3.4)
	Teacher, 56 (11.97)	39 (14.8)	17 (8.3)
	Retired, 6 (1.28)	3 (1.1)	3 (1.5)
	Govt. Officer, 34 (7.26)	27 (10.2)	7 (3.4)
	Sportsman, 1 (0.21)	1 (0.4)	0 (0)
	Pvt. Job, 4 (0.85)	3 (1.1)	1 (0.5)
Mother	Deceased, 5 (1.07)	4 (1.5)	1 (0.5)
	Medical Doctor, 20 (4.27)	13 (4.9)	7 (3.4)
	Engineer, 1 (0.21)	1 (0.4)	0 (0)
	Housewife, 362 (77.35)	201 (76.1)	161 (78.9)
	Teacher, 64 (13.68)	35 (13.3)	29 (14.2)
	Accountant/Banker, 2 (0.43)	2 (0.8)	0 (0)
	Govt. Job, 10 (2.14)	6 (2.3)	4 (2)
	Pvt. Job, 4 (0.85)	2 (0.8)	2(1)

n = number of participants, % = percentage, Govt. = Government, Pvt. = Private, FSc. = Faculty of Science, BSc. = Bachelor of Science.

This study was approved by the Research and Ethics Committee of Medical Teaching Institution-Hayatabad Medical Complex, Peshawar. The questionnaire consisted of demographics, education before entrance into medical school, family background, motivations for choosing a medical field in the first year, satisfaction with their medical profession, intended speciality preference, future career plan, and intention to practice abroad and its reasons in the first year and then in the final year. The reasons (if any) for the change of their plans during 5 years of medical school were also recorded. The link was shared *via* social media platform in December 2020 with the graduating final year and then in March 2021 of new final year class group of each medical school and two reminders were sent. The link was then closed at the start of the third week of April 2021 and the data were retrieved. The total number of students (population size) from five medical schools were 1360 who were contacted through a social media platform. IBM SPSS Statistics for Windows, version 24 (IBM Corp., Armonk, N.Y., USA) was used for analysis. Descriptive statistics like frequencies and percentages were calculated for categorical data (gender, type of medical school, educational background, parents' occupation, motivations to join the medical field, and perceptions in the first and final year of medical school). Age was treated as a continuous variable for which mean $\pm$ standard deviation was calculated. Since a change in percep-

tions during five years in the same participants were compared, the McNemar test was run for pair-wise analysis on binary variables *i.e*. satisfaction and intention to practice abroad. The chi-square test was used to compare intended speciality and career plans among the students. A p-value of <0.05 was set for significance.

Four hundred and sixty eight responses (34.41% response rate) were received during the study period. The baseline demographics of the participants are given in Table I.

When the students' satisfaction with the medical field was compared between their first and final years, the results were non-significant (p=0.11); nevertheless, the intention to practice abroad changed significantly between the first to final year (p=0.002). Two hundred and sixty-five students (56.62%) wanted to future practice in Pakistan in the first year which was reduced to 44 (9.4%) in the final year. Conversely, only 19 (4.06%) wanted to future practice abroad when in their first years, which increased to 140 (29.91%) when in the final year.

The intended speciality choices between public and private medical students were statistically significant in the first year (p <0.001) and in the final year (p <0.001). 'Interest in medicine as a subject' was the most common (n=230, 49.1%) motivation for choosing the medical profession followed by 'proposed by parents' (n=228, 48.7%). There was no statistically significant difference between the career plans of public and private medical students in the first year (p=0.124) and the final year (p=0.217). Most of the students (n=334, 71.4%) stuck to their initial plan.

This study determined the changes in satisfaction status and intention to practice abroad over five years of medical studies. There was no difference in their satisfaction, 250 (94.7%) and 237 (89.8%) for public, and 189 (92.6%) and 192 (94.1%) for private medical students, in the first and final year, respectively. Alternatively, there was a significant difference when asked about the intention to practice abroad with 159/468 (33.97%) intending to practice abroad in the first year compared to 184/468 (39.31%) in the final year. A recently published study from Pakistan reported that 88 (53.7%) of medical students wanted to practice abroad.[2] Other studies done in Bangladesh and India reported different results. More than half of medical students from Bangladesh 72/132 (51%) opted to practice abroad.[4] However, only 18/141 (12.8%) Indian medical students wanted to practice abroad.[1] The difference between the results of this study with other studies is due to three reasons. First, the choice in the first year and final year of the same cohort were compared. Second, this study was conducted on final-year students who have more exposure and insight into working conditions locally and abroad, in contrast to the above-mentioned studies.[1,4] Third, most of the study participants 331 (70.7%) were females and this gender difference may have influenced the overall results. Gender-wise analysis for practice abroad had significant differences. Sixty-four (46.72%) males *versus* 95 (28.7%) females (p <0.001) in the first year and in 68 (49.64%) males *versus* 116 (35.05%) females (p=0.003) in the final year.

There was no difference among students on future career plans. In the first year, postgraduate training in the intended speciality was the most common career choice 162/264 (61.4%) and 123/204 (60.3%) followed by the central superior services (CSS, 13/264, 4.9%) and 19 (9.3%) in public and private medical students, respectively. Similarly, in the final year, postgraduate training was the favoured career choice (188/264, 71.2%; and 141/204, 71.1%) followed by CSS (n=17/264, 6.4%; and 10/204, 4.9%) in the public and private medical students respectively. A study from India reported similar results in which 7 (5%) of their participants opted for the Indian Administrative Service/Indian Police Service.[1] However, their results were from 1st semester students of a single medical school and did not reflect the change in plans throughout medical studies. The present results also indicate that the students were more interested to pursue postgraduate training in the final year than in the first year, but that was not statistically significant. These results are encouraging for the policymakers as it assures them that the resources utilised by the students are not wasted.

The authors also explored the motivational factors of the students to choose medical studies and found that the top three factors were; interest in medicine as a subject 230 (49.1%) followed by proposed by parents 228 (48.7%) and the desire to help others 180 (38.5%). These results reflect that in the community scientific and societal factors affect students' choices. In Indian students, interest in the subject (n=67, 45.3%) was the most common factor followed by stable income (n=64, 43.5%) and parents' wish (n=53, 35.8%).[5] Pakistan and India are in a lower-middle-income group which may be the reason for the similarity between the results. A recent systematic review also reported that motivational factors depend mainly on the income group of the country *e.g*. in the high-income group scientific and humanitarian factors prevail as compared to low-middle income where humanitarian and societal factors are the common factors.[6] Reasons to practice abroad in this study also reflected the same with more students wanted it for scientific reasons *i.e*., better career opportunities. The study strengths are that it provided information about changes in satisfaction and intention to practice abroad through the 5-year course of medical studies, no attrition in response because of the study design, a reasonable sample size, and information about reasons for plan change and comparison between public and private medical students was possible. However, there are certain limitations of the study. This study was conducted in Peshawar from which the results cannot be generalised. The reasons for non-satisfaction with the medical profession were not sought, and a potential recall bias, and more female response may have affected the results.

A shift in students' desire to practice abroad was found but no change in their satisfaction with the profession over five years of medical school. This change in intentions needs attention from the medical education authorities and they should take effective actions to prevent brain drain.

ETHICAL APPROVAL:
This study was approved by the research and ethics committee (Ref No. 378/HEC/B&PSC/2020) of the Medical Teaching Institution-Hayatabad Medical Complex, Peshawar.

PATIENTS' CONSENT:
Every participant consented to participate by submitting the online questionnaire.

AVAILABILITY OF DATA AND MATERIALS:
The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request.

COMPETING INTEREST:
The authors declared no competing interests.

AUTHORS' CONTRIBUTION:
YJM: Contributed to the idea, design, analysis, and interpretation of data, drafting of the manuscript, final approval, and agreed to be accountable.

AR, TA, SA, NH, RA: Contributed to the design, and acquisition of data, drafting of the manuscript, final approval, and agreed to be accountable.

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