

Exploring Factors Influencing Females Decision to Pursue Medical and Dental Education in Karachi, Pakistan: A Cross-Sectional Analysis

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Abstract

Objective: The study aims to investigate the motivations driving female medical and dental students to pursue careers as doctors. It also seeks to understand the various factors shaping their decisions and compare the perspectives of first-year and final-year students in government and private medical and dental education programs in Karachi.

Study type, settings & duration: This comparative cross-sectional study was conducted at government and private institutions in Karachi from July 2022 to February 2023.

Methodology: The government and private medical and dental students of Karachi recruited by non-purposive convenience sampling. A pre-structured questionnaire with a sample size of 1550 students was used which included demographic details and factors and attitude related to the reasons behind to pursue the medical and dental education.

Results: Total of 55.4% students of in public centers choose the profession because of their interest while 51.7% comply with parents' wishes. While 66% of students from private medical and dental colleges choose the profession in compliance with their parent's wishes followed by personal interest i.e. 61.8%. Among different reasons human care holds the major proportion. There is a significant change in attitude towards the reason to pursue the medical and dental education among students of first year and final year in both public and private medical and dental colleges.

Conclusion: It has been concluded that female medical and dental students are primarily motivated to acquire medical and dental education due to their personal interest and a desire to fulfill their parents' wishes. Moreover, the research reveals that there was shift in their perspective on reasons for choosing the profession from first year to the final year in both government and private medical and dental colleges in Karachi.

Key words: Female, students, profession, Pakistan, cross-sectional studies, medical, dental.

Introduction

The choice of a career is a pivotal decision that significantly influences one's life path. It is a

complex and deeply personal process, often driven by individual passions, strengths, and aspirations. Some individuals opt for traditional professions like medicine, law, or engineering, seeking financial stability and societal recognition. Others may pursue creative fields such as art, music, or writing, driven by their passion and the desire to express them. Additionally, some choose to explore emerging sectors like technology, entrepreneurship, or environmental science, aiming to make a lasting impact on the world. Ultimately, the decision should align with one's values, interests, and long-term goals, as it can shape the trajectory of one's life and contribute to a fulfilling and rewarding journey.

Despite the availability of multiple career options, medical and dental professions are the

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MK, IMR, AR, SI, MHB & AA conceptualized the project, did the data collection, drafting, revision & writing of manuscript. MK, SI, MHB & AA also did the literature search. IMR & AR performed the statistical analysis.

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preferable careers of choice because they seem to be unique and noble professional careers and serve humanity.¹ Choosing a career in the medical or dental field is a commendable decision that involves a deep sense of dedication and compassion. Medical professionals, such as doctors and nurses, have the opportunity to save lives, improve patient well-being, and contribute to the advancement of healthcare. Dentists, on the other hand, play a vital role in maintaining oral health and ensuring overall wellness. These fields require rigorous education and training, but the sense of fulfillment that comes from helping others and the potential for a stable and respected profession make them highly sought-after choices for those with a passion for healthcare. The choice of a medical or dental profession should not be influenced by gender. These fields should be open and accessible to all individuals, regardless of their gender. In recent years, there has been a significant shift toward greater gender diversity in medicine and dentistry, with more women entering these professions.

It is essential to promote a culture of inclusivity and equal opportunity, ensuring that people of all genders have the freedom to pursue careers in medicine and dentistry based on their passion, skills, and dedication rather than their gender. According to a workshop summary from 2009, it was found that in the United States, the percentage of female dentistry graduates increased from 39.6% in 1997 to 43% in 2009.² In Pakistan, there are more than 98 accredited medical and dental colleges where female students outnumber males. They make up over 70% of the student population in these colleges and also constitute a significant portion of the doctors in medical and dental institutions.³

A well-educated woman plays a crucial role in society's development. Even though our society presents various challenges and obstacles, female students continue to make substantial contributions to healthcare and related professions. According to the Pakistan Medical and Dental Council (PMDC) data as of July 2023, there are a total of 274,994 registered female professionals in the fields of MBBS and BDS. Among them, 247,566 are medical practitioners, making up 46.97% of the total, while 27,428 are dental practitioners, constituting a significant 65.91% of the total dental professionals.⁴ Attitude is a pivotal factor as it encompasses an individual's thoughts and behaviors, which can be influenced by various changing elements like the social environment, peer pressure, effective teaching methods, and classroom ambiance. Consequently, these factors have an enduring impact on students throughout their learning

journey.⁵ When individuals opt for a career in the medical or dental field, several factors come into play. Historically, the primary motivation was to provide care and aid to patients, as they pursued careers as dentists or medical doctors. However, in today's world, materialistic factors like social standing, improved lifestyle, and financial stability have taken precedence in the decision-making process for choosing a career in medicine or dentistry.⁶ Additionally, other significant determinants such as personal drive, individual interest, future job security, mentor influence, desire for respect, and alignment with parental expectations also contribute to the choice of the medical and dental profession.⁷ A 2021 study indicated that the majority of students entered this profession of their own accord, although some made the choice based on parental guidance or familial ties to the medical field.⁸ An Indian study found that most students were drawn to the medical profession due to their interest, respect, and the esteemed nature of the profession, with financial considerations being of lesser importance.⁹ Similarly, a study in Iran produced nearly identical results.¹⁰

Extensive research literature was thoroughly examined to investigate the factors influencing the choice of the medical and dental profession and how the motivations of female medical and dental students change throughout their academic journey in pursuit of becoming doctors. However, local data on this topic was scarce. Hence, this current study was designed to shed light on the reasons female medical and dental students decide to become doctors and the various factors that shape their decisions, including the transformation in their attitudes from their first year to their final year in government and private undergraduate medical and dental programs in Karachi.

Methodology

This was a cross-sectional study that compared government and private sector medical and dental students. A pre designed questionnaire utilized for the survey. The study was conducted from July 2022 to February 2023, ensuring the confidentiality and anonymity of respondents. Verbal informed consent was obtained from the participating students.

The study group consisted of female medical and dental professional students from both private and government institutions in Karachi. This group included first-year and final-year M.B.B.S and B.D.S students. We employed a non-purposive convenience sampling technique to select the study

sample, with subjects who did not give consent being excluded.

In the government sector, students from institutions like Karachi Medical & Dental College (KMDC), Dow University of Health Sciences (DUHS, DMC), and Jinnah Sind Medical University (JSMU) were included. In the private sector, students from institutions like Liaquat College of Medicine and Dentistry (LCMD), Hamdard University, and Fatima Jinnah Dental College (FJDC) were part of the study.

To determine the minimum sample size, we used Raosoft software with a confidence interval of 95%, a margin of error of 5%, a population size of 2500, and a response distribution of 50%. Of the approximately 2000 students approached, 1550 consented to participate. According to the Yamane Method, considering the population of female doctors (Medical doctors = 116,292, Dental doctors = 18,080 as per current PMDC statistics), a sample size of 400 was deemed appropriate for a 5% margin of error.¹¹

Data collection involved the use of a questionnaire covering demographic information and reasons for choosing a medical or dental profession. The questionnaires were distributed to students under investigator supervision. Data analysis was carried out using SPSS version 20.00, with frequencies and percentages calculated for qualitative variables such as level of study, sector, and reasons for choosing the medical and dental profession. Comparative analysis, employing the chi-square test, was utilized to compare responses between first-year and final-year students, with a significance level set at $p < 0.05\%$.

The ethical approval was obtained from the Ethical & Scientific Review Committee of Karachi Medical and Dental College, Karachi through reference no. 028/21.

Results

Figure shows the percentage of participants from private and government colleges in which public sector students had a major contribution. This can be because of the enrollment of a greater number of students in the public than in the private sector.

Table-1 shows the percentage of responses from students in the private and public sectors. 55.4% students of in public centers choose the profession because of their interest among which human care was the priority i.e. 36.9%. While compliance with my parents' wishes was the second most reason for selecting the medical and dental profession as a career. In the private sector the majority of students i.e. 66% choose the profession

in compliance with their parent's wishes to penetrate the medical and dental profession. This was followed by personal interest i.e. 61.8% in which human care accounts for a major reason.

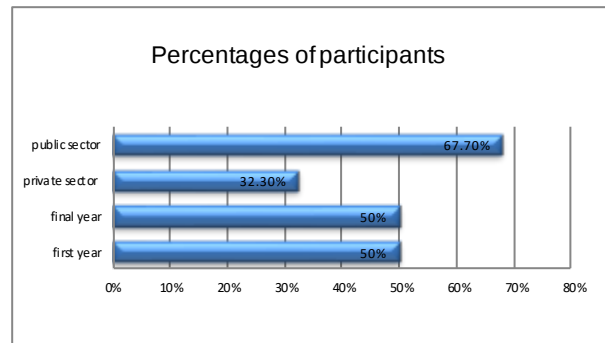


Figure: Showing contribution of participants.

Table 1: Showing percentage of responses among private and public sector students.

Options	Public Sector % ($n_1=1050$)	Private Sector % ($n_2=500$)
To accomplish the parent's wishes.	51.7	66.0
Due to personal interest	55.4	61.8
Human care	36.9	50.0
Save lives	32.3	44.0
Interaction with people	18.4	34.4
To get good marriage proposals.	7.4	9.4
Just to get a "Doctor" designation	15.3	17.6
Your best friend wanted to become a doctor	6.7	11.6
Influenced by a role model inside/outside the family	27.5	38.4
To get fame and money	20.8	28.2
Inspired by doctors	43.3	57.4
To help poor and serve country	51.0	61.0
To prove yourself and make your life more challenging	45.7	60.0

Table-2 shows academic year wise difference in opinion of choosing medical and dental profession. The students of both first year and final year from public and private medical and dental colleges prioritize personal interest as their major reason i.e. 59.7% and 56.9% respectively. Among different reasons accomplishment of parent's wishes and to help poor and serve the country holds the major proportion in both sectors. This was followed by prove yourself and makes your life more challenging.

* Statistical significant *p* value i.e. ≤ 0.05 **Table 2: Showing academic year wise difference in opinion of choosing medical and dental profession.**

Options	First Year % (<i>n</i> ₁ =775)	Final Year % (<i>n</i> ₂ =775)
To accomplish the parent's wishes	56.1	52.0
Due to personal interest	59.7	56.9
Human care	43.4	39.6
Save lives	39.0	33.2
Interaction with people	28.2	19.0
To get good marriage proposals	7.2	9.5
Just to get a "Doctor" designation	15.5	15.0
Your best friend wanted to become a doctor	9.8	7.7
Influenced by a role model inside/outside the family	31.0	28.9
To get fame and money	21.9	25.0
Inspired by doctors	46.3	48.0
To help poor and serve country (human care)	55.0	53.0
To prove yourself and make your life more challenging	48.5	52.6

Table-3 shows the level of significance i.e. *p*-value regarding the attitude of first-year and final-year students about the preferences regarding choice of profession. It has been observed that students of first-year medical and dental colleges showed significant results in compliance with parents' wishes and because of personal interest. While students of final year MBBS and BDS showed significance in factors like compliance with parents' wishes, and personal interest, to get a good marriage proposal to prove themselves and makes life more challenging.

Table 3: shows *p* value regarding the attitude between first year and final year students about choice of profession.

Options	First Year % (<i>n</i> ₁ =775)	Final Year % (<i>n</i> ₂ =775)
Compliance with the parent's wishes	0.04*	0.05*
Due to personal interest	0.03*	0.04*
To get good marriage proposals	0.08	0.04*
Just to get a "Doctor" designation	0.09	0.07
Your best friend wanted to become a doctor.	0.09	0.09
Influenced by a role model inside/outside the family	0.07	0.06
To get fame and money	0.06	0.05*
Inspired by doctors	0.07	0.06
To help poor and serve country	0.06	0.06
To prove yourself and make your life more challenging	0.08	0.04*

Discussion

The present study aims to understand the motivations behind female students choosing the medical and dental education as professions, with a focus on those in public and private institutions in Karachi, Pakistan.

Notably, the medical and dental fields have a significant female presence, possibly due to the higher enrollment of women in these disciplines. These professions are held in high regard in our society, offering stability and respect, particularly for female professionals.

Interestingly, 55.4% of public sector students and 61.8% of private sector students selected medical profession based on their personal interest. These findings do not align with a study conducted in 2021 indicating that most of the students joined the profession because of their parents' wishes and approximately one fifths of the students do not have personal interest in this career choice.¹²

Less common reasons include seeking fame and fortune, influence from family role models, a desire for a challenging life, and a commitment to helping the less fortunate. This is in contrasts with study conducted at Saudi Arabia where many chose the profession to get the government job.¹³ Similarly study conducted in South India reported that the interns cited their parents' desire (35.8%), their own interest and enthusiasm for the field (45.3%), and financial security (43.5%) as the main reasons for selecting medicine as a career. Only around 10% of the interns were eager to pursue post-graduation courses, whereas the majority (73.7%) wanted to moving in the direction of general practice and/or doing government service in a primary care capacity.¹⁴

Another study conducted in India reported almost similar results. They reported that Students chose the medical field mostly because they wanted to help the community, 55 (58.5%), followed by familial motivation 44 (46.8%) and the profession's social standing 23 (24.4%). Of the 54, more than half (57.4%) them had been persuaded to seek a career in medicine in one way or another-usually by a parent.¹⁵

Academic year wise difference in opinion of choosing medical and dental profession among private and public sector student was explored. Major change in the attitude of study participants toward career choice during their academic journey was revealed. First-year students tend to choose based on their own will (59.7%) and parental wishes (56.1%), but final-year students place a greater

emphasis on personal interest (56.9%). This shift may result from increased exposure to the profession's challenges and competitiveness during their academic journey. Similarly, A comparative study was conducted in Japan, published in 2009 determines the attitude of Japanese and Swedish students revealed that 44% Swedish students choose the procedure due to personal interest while 32% Japanese students choose the procedure due to parental wish. Future career pursuance were 64% Japanese and 47% Swedish pursue General dental practice in their future.¹⁶

It has been observed that factors like to get good marriage proposals, to get fame and money. Inspired by doctors and to prove yourself and make your life more challenging has been increased from first to final year which shows a more practical approach of students in transition from their academic journey from first to final year of their professional education and these factors show statistical significant results from first year to final year journey. Compliance with the parent's wishes and due to personal interest are the statistical significant answers among first year students, $p = 0.04$ and 0.03 respectively while Compliance with the parent's wishes ($p = 0.05$), personal interest ($p = 0.04$), getting good marriage proposals ($p = 0.04$), get fame and money ($p = 0.05$) and to prove yourself and make your life more challenging ($p = 0.04$) are the statistically significant answers among final year students.

Similar results have been reported in other studies conducted in Pakistan.¹⁶⁻¹⁸

It's notable that materialistic reasons, such as fame and money, are of little significance to female medical and dental students, indicating a shift in the core values of the current generation of doctors. This aligns with previous research conducted in south East Asia.¹⁹⁻²¹

The findings of this study reveal that the most influential factors in career choice are personal interest, compliance with parents' wishes, and a sense of humanitarian duty. It's noteworthy that a significant portion of private sector students follow their parents' wishes (66%), while 51.7% of public sector students do the same. In both sectors, compliance with parents' wishes and personal interest hold top positions. It's important to mention that family often plays a pivotal role in career decisions, driven by societal norms and the pursuit of social status, professional growth, financial security, and future stability.

However, the study has limitations, including its cross-sectional design and potential selection bias. It also doesn't follow the same cohort of students throughout their academic years,

offering only a snapshot of influential factors for female students. Future studies should consider longitudinal designs, larger participant samples, and the inclusion of male students to gain deeper insights into the factors influencing career choices in the medical and dental education and chose it as professions. Additionally, it's recommended that students be given more choice in their career paths, respecting their interests and parental guidance.

It has been concluded that female medical and dental students are primarily motivated to acquire medical and dental education due to their personal interest and a desire to fulfill their parents' wishes. Moreover, the research reveals that there was shift in their perspective on reasons for choosing the profession from first year to the final year in both government and private medical and dental colleges in Karachi.

Conflict of interest: None declared.

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