

Association of Entrance Test Percentage and Motivation to Join Medical College of MBBS Students: A Study of Lower-Middle Income Country

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Abstract

Background: Motivations for joining medical college vary in the lower-middle, upper-middle, and high-income nations and broadly categorizing, Scientific, humanitarian, and societal motivations inspire students to join medical school.

Objective: To determine the association between motivation for joining Medical College and the Admission test percentage of Undergraduate students

Materials & Methods: The study involved 206 students (study setting removed to maintain anonymity). It was a co-relational study conducted from 1st September 2022 to 1st January 2023 after obtaining ethical approval. The researchers looked into the interconnection between motivations for joining the medical school and admission percentage of medical students of (study setting removed to maintain anonymity). All MBBS students from 1st to 4th year were included. Faculty & students from other departments were excluded.

Results: Our study found that humanitarian motivations dominated in students, with MDCAT Percentages ranging from 50% to 70%. Societal motivations are more prevalent in students, with MDCAT Percentages ranging from 71% to 76%. At the same time, scientific motivations dominate in 79% to 90% achievers of MDCAT Percentage.

Conclusion: Overall Humanitarian motivations (40.1%) were dominant, followed by Societal (33.9%) and Scientific (25.7%). Scientific motivations were dominant in high achievers of MDCAT. Girls were more inclined towards humanitarian motivations, while boys towards societal.

Keywords: Admission test Percentage, Lower Middle Income Country, Humanitarian motivation

Introduction

Motivation in education refers to a student's desire to work hard to attain educational goals. Its strength depends on the student's willingness to put in an effort¹. The hierarchy of motivation has seven levels: physiological needs, the need for protection, the desire for belongingness, the need for admiration, the need for identity, the need to comprehend and understand, and aesthetic needs². Therefore, a distinction should also be made between the quality and strength of motivation on students as well³.

Motivations for joining medical college vary in the lower-middle, upper-middle, and high-income nations. Goel et al., (2018) comprehensively evaluated motivation of medical students to choose medical studies based on World Bank categories of lower-middle, upper-middle, and high-income nations and found significant differences among these economic levels⁴.

Broadly categorizing, Scientific, humanitarian, and societal motivations inspire students to join medical school⁴. The *scientific Motivations* for joining a medical school are mostly focused on using cutting-edge technology, studying medicine as a subject, Opportunities to travel and work overseas, Research, and Bereavement⁴. These reasons were more significant in high-income Countries ^{6,7,11}. The classification of *Societal motivations* for joining a medical school was mostly based on the following aspects; Job security, Social status/prestige, and High income Proposed by parents ⁴. These reasons were more common in upper-middle-income countries ^{8,9,11}. The classification of *Humanitarian motivations* for joining a medical school was based on the following aspects mainly; Desire to help others, Desire to give back to their home community or

country ⁴. These reasons were more dominant in Lower-middle income countries ^{10,11}.

According to a research, around fifty-two percent of newly admitted students were interested in medicine, while others joined for reasons including biology interest (19%), parental pressure (13%), and high marks or no career plan (12%) in Australian research ¹². Younger students are less motivated for medicine than older students to join medical school. The boys lag behind the girls in motivation for joining medical school ¹³. A successful medical student must have non-cognitive abilities, qualities, good attitudes, and academic proficiency. Literature shows links between non-cognitive traits and medical school success ¹⁴. According to a study at Foundation University Medical College, a blend of cognitive ability criteria (FSc/pre-admission exam scores) and non-cognitive abilities (personality traits) should be used to choose medical school students ¹⁵.

The admission test to be considered in this study is the Medical and Dental Colleges Admission Test (MDCAT), conducted by various institutions in Pakistan. MDCAT is conducted at the provincial level (by a nominated university in a province) each year by Pakistan Medical and Dental Council (PMDC), except for 2020 & 2021, when the Pakistan Medical Commission conducted a national-level test. In this research, we will focus on the admission test Percentage of medical students who joined a private medical college in Punjab province. A past study about MDCAT scores revealed that MDCAT failures result in pessimism, depression and loneliness symptoms^{9,16}.

In addition to that, previous studies have also emphasized that economy of a country has a role in directing the motivation and ambitions of

students to join medical college as there were found distinct differences in choice of lower-middle, upper-middle and high income countries. Pakistan is a lower-middle income country¹¹ and private medical colleges in Pakistan charge a very large amount of fee^{15,28} and this leads to selection of students that belong to high affordability background in Pakistan.

This research aimed to determine the association between motivation for joining the medical college and MDCAT test score of medical students of a private medical college, as well as determining the dominant cause among scientific, societal, and humanitarian motivations. Also, there is a dearth of literature focusing on whether the high economic status of students affects their motivations for joining medical college in a lower-middle income country or not.

Materials and Methods

The study design employed in this research was a correlation study, and the sample comprised 206 medical students from ABWA medical college from 1st September 2022 to 1st January 2023 after getting ethical approval. By using a self-designed questionnaire, the researchers looked into the interconnection between motivations for joining the medical school and Admission percentage of medical students of ABWA Medical College, Faisalabad. The sampling technique was probability simple random sampling. Students of 1st to 4th Year MBBS were included in this study, while other students of DPT and other departments and faculty were excluded. After taking informed consent, the participants were asked to complete the self-designed questionnaire. All the data was kept confidential, and anonymity was maintained. The data was analyzed using SPSS v26. Analysis of variance

(ANOVA) is applied keeping $p < 0.005$ as significant.

Results

The Results of Our Study suggest that Humanitarian motivations dominated, with 40.3% [Serving Humanity (40.3%)] as the most dominant motivation. Societal motivations stood second with 33.9% [Job Security & Respect (18.4%), High Rank (13.1%) & Parental Pressure (2.4%)] while Scientific motivations ranked almost 25.7% [Study and Work in Medicine (22.8%) & Personal Interest (2.9%)] as shown in Table-1 and Fig 2.

Humanitarian Motivations were dominant in students, with MDCAT Percentages ranging from 50% to 70%. Societal motivations were more prevalent in students, with MDCAT Percentages ranging from 71% to 76%, while humanitarian motivations again dominated for a short interval between 76% to 78% and scientific motivations dominated in students who achieved 79% to 90% in MDCAT.

Our Study also shows that Humanitarian motivations dominated in girls while societal motivations dominated in boys, as shown in Table I. SPSS Version 26 was used for the data analysis. We found the ANOVA test of motivations for joining medical college was highly significant with the MDCAT Percentage & categorization of motivations for joining medical college, as shown in Table II. The Reasons for joining the medical college with MDCAT Percentage are shown in Figure 3.

Table I: Motivations for Joining Medical College in relation to Residence status and Variance with Categorization of motivations (Humanitarian, Societal & Scientific)

Categorization of Motivations	Motivations for Joining Medical College	Residence				Percentage	ANOVA
		Hostellite		Day Scholar			Sig.
		Gender		Gender			<0.005
		Male	Female	Male	Female		
Humanitarian	Serve Humanity	23	22	15	23	40.3%	
Societal	Job Security & Respect	15	4	11	8	18.4%	
	High Rank	11	4	11	8	13.1%	
	Parental Pressure	1	1	1	2	2.4%	
Scientific	Study & Work in Medicine	18	14	8	7	22.8%	
	Personal Interest	2	0	4	0	2.9%	

Table II: Variance of Motivations for Joining Medical College with Admission Test Percentage and Categorization of Motivations

ANOVA	F	Sig.
MDCAT Percentage	5.588	<0.005
Categorization of Motivations for Joining Medical College	7512.427	<0.005

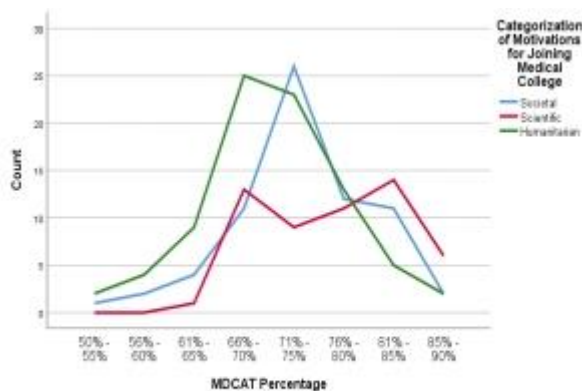


Figure-2: Categorization of Motivations for Joining Medical College in relation to MDCAT Percentage. Plot showing that in MDCAT Scores ranging from 50% - 70% Humanitarian reasons are dominant, 71% - 76% Societal reasons are dominant, 77% to 79% Humanitarian reasons again dominate for a short interval. While from 79% - 90% Scientific reasons are dominant.

Figure 1: MDCAT Percentage & Categorization (eps file Provided)

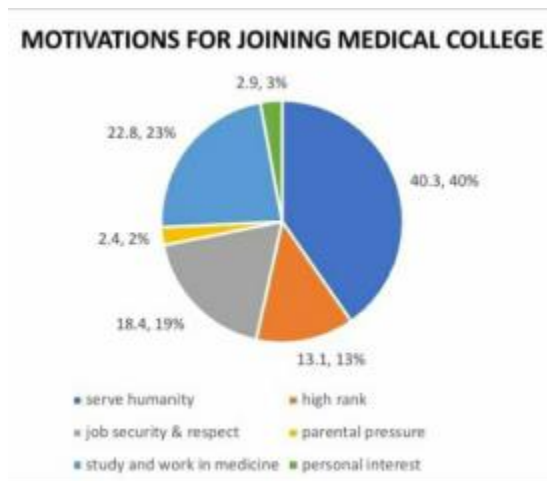


Figure 2: Motivations for joining Medical College

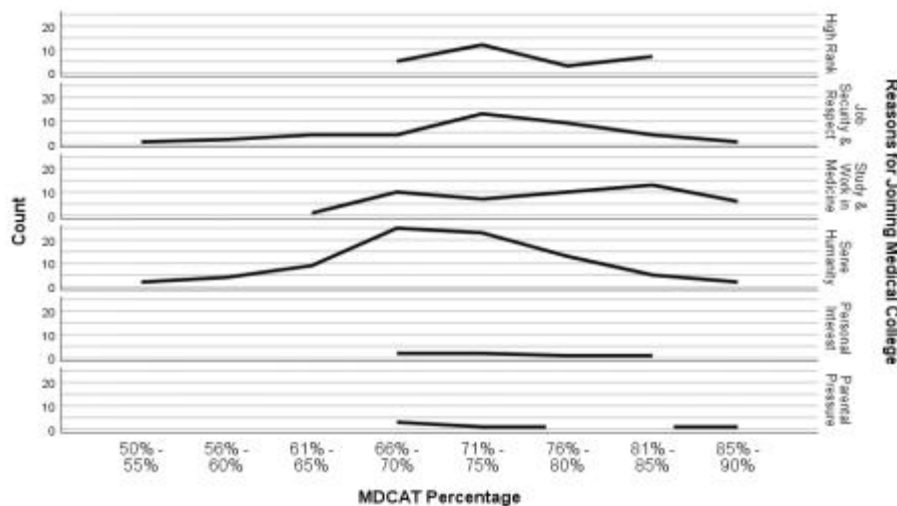


Figure 3: Reasons for joining Medical College in relation to MDCAT Percentage (eps file Provided)

Discussion

Medical students are motivated by science, humanity, and society. Scientific, societal, and humanitarian considerations drive medical

school enrollment⁴. Scientific motivations for medical school include using cutting-edge technology, studying Medicine, travelling and working abroad, research, and bereavement ⁴. These reasons mattered more in high-income

countries^{5,6,11}. Societal motives for joining medical school included job security, social status/prestige, high pay, and parental suggestion⁴. Upper-middle-income countries have more of these factors^{7,8,11}. Humanitarian reasons for joining medical school were generally centered on helping others and giving back to their community or country⁴. Lower-middle income countries favored these reasons^{9,11,26}.

The results of our study coincide with Goel et al. (2018)⁴, which found that Humanitarian reasons are dominant in lower-middle-income countries by comparing different studies in India^{9,16}, per World Bank Classification¹¹.

Our study is compatible with Ikram *et al.*,¹⁸ conducted in Jeddah finding altruism is the most prevalent driving force behind students' decisions to enroll in medical school. The study of Shahid *et al.*¹⁹ conducted in 2022 on 1st to Final Year MBBS students of Yursa Medical College, also concluded that the most common reason (87.1%) to enter the medical profession was to help people. The limitation of this research is that it is a single institutional study. In this research, it was hypothesized that wanting to assist others, finding meaning in one's own life, and having an interest in Medicine were the primary motivators for individuals to pursue careers in Medicine. Students' ability to see the need for more medical professionals and use it as a driving force in their career choices indicates their maturity. The scholastic success of medical students is also often unrelated to their motives for selecting Medicine. Medical educators may use this data to direct their future studies.

Our study is also compatible with the study conducted by Hassan et al. which concluded that noble profession was the first factor in student's decision to join the medical sphere, followed by

the desire to help others. We would be capable to conduct an accurate analysis of the projected trajectory of students if we had a better grasp of the reasons that motivate medical students to pursue careers in the medical industry ²⁰.

Our study aligns with Mutwali *et. al.*, who concluded that The most popular motivation for selecting a medical career (78.1%) was altruism amongst Sudanese medical students ²¹. Our data demonstrated the elements that influence Sudanese medical students' job choices and medical educators can use them for curriculum and professional development.

Our Study is also compatible with Kumar *et al.*, which says found that medical students want to serve society, work in the public sector, and expect job security and a good salary. Because of society, they enter a college wanting to be top cardiologists and neurosurgeons. Patients now expect high-quality, sophisticated care since they can always locate a more qualified doctor with more degrees ²¹. Given the current environment, medical graduates should pay attention to specialization. Since 70% of our population is rural and dependent on primary care physicians and general practitioners, they are the only ones who can preserve our crumbling healthcare delivery system and improve our health indices. Medical courses should emphasize promotive, preventative, curative, and rehabilitative treatment. Our healthcare system needs a major overhaul to attract young, brilliant brains who want to work for the government ²².

While few studies conclude that parental pressure is the most dominant reason for joining medical college ²³, few students become doctors just because their parents and others compel them to be. Thus, we must attack this issue head-on and medical colleges should create

community-based counselling sessions for students who are indecisive about their specialty after graduation. However, the students having the future ambition of specializing in medicine should have "Service to humanity" as the most dominant reason for joining medical colleges.

However, a study indicated that self-interest drove MBBS enrollment and MBBS was chosen just because of parental pressure as earning respect in society and family pride motivated medical students. On the contrary, nearly one-third of students regretted becoming doctors, and females felt this more as 11.8% wanted to drop out.^{24,25}

However, findings of Watari *et al.* imply that a student's drive to pursue a career in medicine may be negatively impacted if one or both of their parents are already in the medical field²⁶.

Sattar *et al.* found that 70.6% of the 350 medical students were female, while 29.4% were male. Humanitarian reasons were the most common motivator for women, followed by societal ones. While societal reasons motivated male students the most, followed by Scientific. They concluded that Females were more inclined towards humanitarian reasons and males were towards societal reasons²⁸. These findings are coinciding with our results.

As far as the Limitations of our Study are concerned, it is a Single institutional study, and the need to measure the strength of these motivations of the medical students remain intact, along with the analysis of the Cognitive and Non -Cognitive abilities of students for future studies in the utmost best possible manner.

Conclusion

Concerning MDCAT Percentage, High achievers (MDCAT Percentage ranging from 79% - 90%) had scientific motivations dominant. In Percentages from 71% - 76%, societal motivations were dominant, while from 50% - 70%, humanitarian motivations were dominant.

Overall Humanitarian motivations (40.1%) were dominant, followed by Societal (33.9%) and Scientific (25.7%). Girls were more inclined towards Humanitarian motivations, while boys were towards Societal.

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