

# Determinants of Postgraduate Medical Education Regarding Speciality and Place among North Indian Graduates: A Cross Sectional Study

Aman Dev Singh<sup>1</sup>, Simmi Oberoi<sup>2</sup>, Rohit Batish<sup>3</sup>, Muskan Chopra<sup>4</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Professor, <sup>3</sup>Senior Resident, <sup>4</sup>MBBS Student, Government Medical College, Patiala.

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## Abstract

**Background:** Medical undergraduates are a vital source of the country's physicians. Their preference for medical specialties helps allocate the workforce among various medical specialties. The options for medical career specialties have increased, parallel to expanding knowledge in different fields. Given the vast opportunities to choose from, the factors influencing the choices of medical interns in our country need to be better understood.

**Objectives:** This study was conducted to know what factors influence the interns to choose the place to pursue postgraduation.

**Methods:** This cross-sectional study was conducted from July 2022 to August 2022 at GMC Patiala. Out of the 203 interns of the MBBS batch 2017 batch, 199 were interviewed using an online google form.

**Results:** Out of the 199 participants, 73.8% of students wanted to pursue postgraduation in India. General Medicine (77.4%) was the most preferred branch. Almost half (47.7%) of students chose the specialty during their internship. Most participants (82%) with a family income of fewer than ten lakhs preferred to pursue Postgraduation in India.

**Conclusions:** Participants favored clinical medicine branches, with General Medicine being the most popular. Family income, rather than marks, influenced the decision to pursue postgraduate studies abroad or in India. The main reason for studying abroad was better education and a higher standard of living. At the same time, some students preferred to stay close to home and study in India for postgraduate studies for the sake of family and familiar surroundings.

**Keywords:** *Medical Education, Postgraduation, USMLE, NEET-PG, PLAB*

## Introduction

Pressure on human resources has increased globally for many demographic and epidemiological reasons. As a result, there has been a rapid international efflux of health workers, mainly from developing nations to the more developed nations, a phenomenon referred to as "brain drain"<sup>1</sup>. Medical undergraduates are a crucial source of the country's physicians, and their preference for medical

specialties helps in workforce allocation among various medical specialties. Determining which factors lead these graduates to select their areas of specialization is vital in achieving a proportionate distribution of doctors among all specialties<sup>2</sup>. The medical specialties selected by medical graduates as their careers are an essential determinant of the future placement of doctors in different specialties. It is critical for planning the workforce of healthcare services<sup>3</sup>.

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**Corresponding Author:** Rohit Batish, Senior Resident, Government Medical College, Patiala.

**E-mail:** rosain.batish@gmail.com

Despite being a core component of medical workforce planning and development, what prompts medical students and graduates to choose their specialty needs to be better understood<sup>4</sup>. Medical graduates go through clinical rotations in different medical specialties for a defined period as hospital interns to learn and acquire basic professional skills under the guidance of their senior teachers. Hence facilitating their decision to choose the branch to specialize in<sup>5</sup>. The options for medical careers specialties have increased, parallel to expanding knowledge in different fields. Given the vast opportunities, the factors influencing the choices of medical interns in our country need to be better understood<sup>6</sup>. There is an urgent need to figure out the factors that motivate students to opt for a specific specialty of their choice so that a balance can be maintained among medical doctors among various specialties<sup>7</sup>.

With this background in mind, we carried out this study to assess the factors influencing the choice of postgraduation and the place of doing postgraduation among interns in a medical school in North India.

### Material and Methods

**STUDY DESIGN** - This was a cross-sectional observational study.

**STUDY SETTING** - The study was done at Government Medical College, Patiala (North India), from July-August 2022.

**STUDY PARTICIPANTS** - All interns of MBBS

batch 2017 were included in this study who gave consent to participate in the study.

**STUDY VARIABLES** - An online google form was administered to students, which consisted of - Informed Consent, Demography, Education, Career Choice, and Choice of Specialty. (SUPPLEMENTAL TABLE 1).

**SAMPLE SIZE** - 203 students were administered a questionnaire, of which 199 responses were achieved.

### Statistical Methods

Data were collected and entered into Microsoft Excel. Data were cleaned, and descriptive statistics were applied.

### Findings

Out of the n=199 participants, 110 were female, and 89 were male. 147 (73.8%) (FIGURE 1) students wanted to pursue postgraduation in India, whereas 52 (26.1%) wanted to pursue postgraduation abroad (FIGURE 2). General Medicine (77.3%) was the most preferred choice of specialty, and the least favored was Anatomy (6%) (Table 1). Interest in the specialty (92%) was an essential factor in choosing the same, the least essential factor being family members in the same specialty (21.6%). (FIGURE 3). Having family in India (56.3%) (FIGURE 2) was the most sought reason for staying in India for postgraduation. In contrast, higher education and a better standard of living (both 25%) were the most common reasons for going abroad to postgraduation (FIGURE 1).

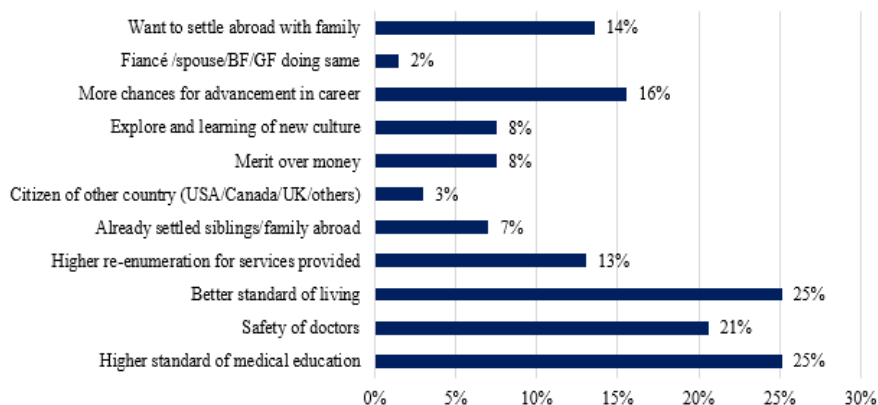
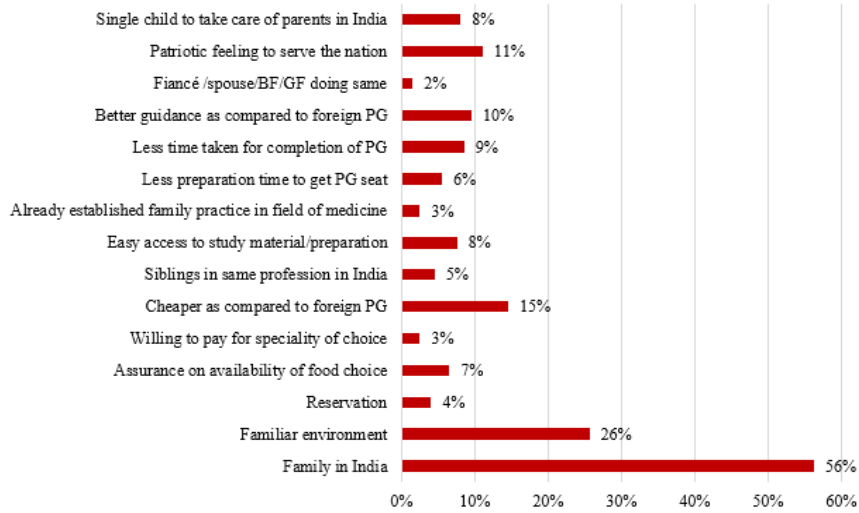
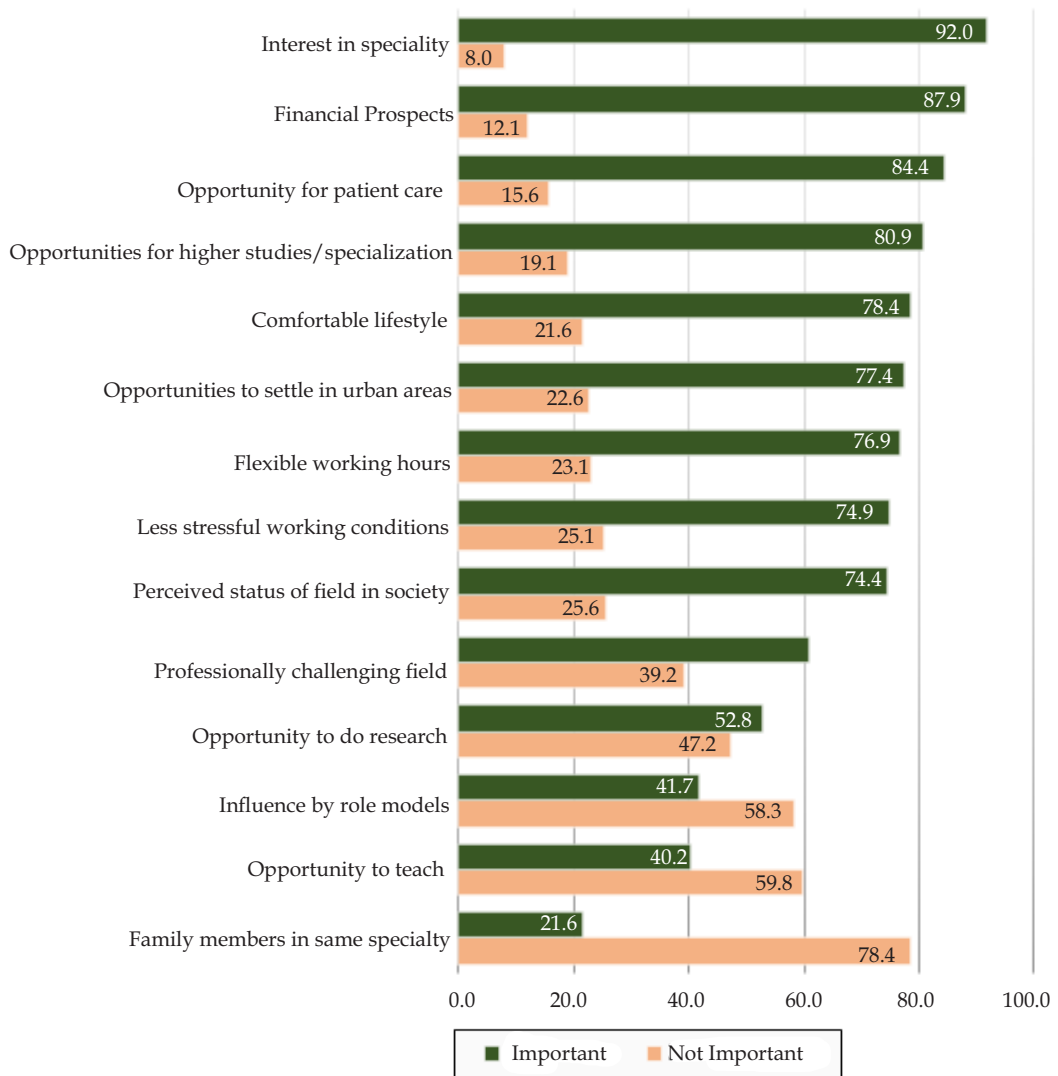


Figure 1: Reason for Choosing Foreign PG



**Figure 2: Reason for Choosing Indian PG**



**Figure 3: Distribution of Participants as per their perceptions about reasons for choosing the speciality [n = 199].**

## Discussion

General medicine was the most preferred specialty (77.3%) in our study, comparable to the study done by Smitha Bhat et al. and also Sharma et al., where internal medicine was the most preferred specialty. Clinical branches held the top spot amongst students due to reasons such as interest in the specialty, more avenues for super specialization, financial safety, perception of the said field in society, and desire to open their setup. However, with an increasing private medical colleges and clinical management seats, there is serious doubt about the quality of medical graduates produced. Many medical colleges may need more resources; thus, becoming a good clinician becomes doubtful<sup>8,9</sup>. Anatomy (6%) was the least preferred branch in our study, comparable to the study by Bagga et al. Primary specialties are least chosen by students when deciding on the choice of future specialties mainly because they do not want to teach, have limited avenues for further studies, and have less financial security than clinical specialties. This trend can be disturbing since it will lead to an acute shortage of teachers in primary specialties, and medical colleges will be left in need of these teachers. They can also result in hiring non-specialist teachers at these<sup>10</sup>. When asked about their reason for choosing a particular specialty, 91.9% said that interest in a specialty was the main reason which is similar to a study done by Chawla et al. in which out of 280 students, 68.5% had an interest in a specialty as main reason<sup>11</sup>. This can be due to some personal experience/ influence in a career or can be due to an individual liking a particular specialty. They also considered financial aspects, the opportunity for patient care and higher studies, and a comfortable lifestyle, including flexible working hours and less stressful conditions, as other factors while preferring a particular specialty.

Gender-wise specialty preference revealed that the most preferred branch by both males and females was General medicine (34.7% and 42.7%, respectively), followed by Orthopedics in males (29.6%) and Dermatology (40.7%) in females (TABLE 2). However, it was inconsistent with a study by Bagga et al., in which Orthopedics and Surgery were the most preferred among males and Obs &

Gynae followed by Pediatrics in females. It could be because this study was done in a different time setting and a separate geographical area and environment, which influenced their choice-making<sup>10</sup>. The least preferred branch by both male and female were Anatomy in our study, which is consistent with the study done by Anand et al., which reaffirms the fact that students do not prefer basic branches of medicine for reasons mentioned earlier<sup>6</sup>.

Concerning the place of doing postgraduation majority of the students, 73.8%, wanted to pursue NEET PG in India. Having a family in India was the most common reason for seeking postgraduation in India, indicating that the human need for affection, love and emotional support plays a pivotal role. It confirms that 'money is not everything.' Only 23.6% of students chose to pursue a specialty abroad, with the most important reason being the higher standard of medical education abroad, which is consistent with the finding of Chawla et al. wherein also majority preferred to stay in India as compared to abroad.<sup>11</sup>

When family income was compared with the choice of postgraduation, those with a gain of more than ten lakhs, 49% wanted to pursue postgraduation in India. In contrast, 51% wanted to do postgraduation abroad, and for those with income less than ten lakhs, 18% wanted to do postgraduation abroad and 82% to do postgraduation in India. The chi-square test with Yates correction yielded a p-value <0.00001, which is significant (TABLE 2). Those with more financial stability are more likely to go abroad as they have more spending power to afford the cost of studying in a foreign country, contrary to those with less income, possibly by taking loans/ borrowing money.

Out of 19 with an aggregate of more than 70% (first division), 36.8% were willing to go abroad for postgraduation, while 63.2% wanted to pursue postgraduation in India via NEET-PG. Similarly, of those 180 with an aggregate of less than 70% (second division), 25% and 75% wanted to pursue postgraduation from abroad and in India, respectively. A chi-square test was applied, and a p-value of 0.263824 which is not significant, a p of <0.5 (TABLE 3)

**Table 1: Distribution of participants according to their preference to the subjects [n=199]**

SUBJECT	Female	Male	Total
Medicine	85 (42.7)	69 (34.7)	154 (77.4)
Dermatology	81 (40.7)	56 (28.1)	137 (68.8)
Radiodiagnosis	61 (30.7)	55 (27.6)	116 (58.3)
Surgery	60 (30.2)	54 (27.1)	114 (57.3)
Pediatrics	61 (30.7)	36 (18.1)	97 (48.7)
Emergency Medicine	58 (29.1)	28 (14.1)	86 (43.2)
Ortho	25 (12.6)	59 (29.6)	84 (42.2)
Ophthalmology	37 (18.6)	31 (15.6)	68 (34.2)
Anesthesia	43 (21.6)	24 (12.1)	67 (33.7)
Obstetrics and Gynecology	58 (29.1)	7 (3.5)	65 (32.7)
Pulmonary TB	35 (17.6)	28 (14.1)	63 (31.7)
Radiation Oncology	39 (19.6)	17 (8.5)	56 (28.1)
ENT	36 (18.1)	18 (9)	54 (27.1)
Sports Medicine	15 (7.5)	18 (9)	33 (16.6)
Community Medicine	22 (11.1)	10 (5)	32 (16.1)
Nuclear Medicine	16 (8)	14 (7)	30 (15.1)
Pathology	19 (9.5)	11 (5.5)	30 (15.1)
Forensic Medicine and Toxicology	16 (8)	13 (6.5)	29 (14.6)
Rehabilitation Medicine	19 (9.5)	6 (3)	25 (12.6)
Tropical Medicine	15 (7.5)	8 (4)	23 (11.6)
6 Month USG	11 (5.5)	9 (4.5)	20 (10.1)
Pharmacology	15 (7.5)	5 (2.5)	20 (10.1)
Physiology	12 (6)	8 (4)	20 (10.1)
Transfusion Medicine	11 (5.5)	7 (3.5)	18 (9)
Biochemistry	10 (5)	4 (2)	14 (7)
Microbiology	9 (4.5)	4 (2)	13 (6.5)
Anatomy	8 (4)	4 (2)	12 (6)

\* Multiple Choice

**Table 2: Distribution of the participants as per Annual Family Income viz-a-viz Postgraduation [n=199]**

FAMILY ANNUAL INCOME	FOREIGN PGS n (%)	NEET-PG AND OTHERS n (%)	TOTAL n (%)
Above 10 Lakh	25 (51)	24 (49)	49 (100)
Less than 10 Lakhs	27 (18)	123 (82)	150 (100)
Total	52 (26.1)	147 (73.9)	199 (100)

The chi-square statistic is 20.8634. The  $p$ -value is  $< 0.00001$ . **Significant** at  $p < .05$ .

The chi-square statistic with Yates correction is 19.1878. The  $p$ -value is  $< 0.00001$ . Significant at  $p < .05$ .

**TABLE 3: Distribution of the participants according to the Percentage scored in MBBS viz-a-viz Postgraduation [n=199]**

Percentage Marks	Foreign PGS n (%)	Neet-Pg And Others n (%)	Total n (%)
70% and above	7 (36.8)	12 (63.2)	19 (100)
70% and below	45 (25)	135 (75)	180 (100)
Total	52 (26.1)	147 (73.9)	199 (100)

The chi-square statistic is 1.2486. The  $p$ -value is .263824. **Not significant** at  $p < .05$ .

## Conclusion

Most participants preferred clinical medicine branches, with General medicine being the most desired, followed by Dermatology. Participants with an annual family income of more than ten lakhs preferred pursuing postgraduation abroad, and marks were not a significant factor in deciding. Reportedly, the primary factor for opting for a foreign PG was better education and a better standard of living. At the same time, some students preferred to pursue postgraduation in India to stay close to their families and the environment they were used to.

**Conflict of Interest:** No conflict of interest.

**Source of Funding:** No funding required.

**Ethical Clearance:** The study was granted permission by Institutional Ethics Committee vide letter no- Trg.9(310)2022/24741-42 dated - 27.07.22 (SUPPLEMENTAL FILE 2).

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## References

1. Akl EA, Maroun N, Major S, et al. Postgraduation migration intentions of students of Lebanese medical schools: a survey study. *BMC Public Health*. 2008;8:191. doi:10.1186/1471-2458-8-191
2. Alawad AA, Khan WS, Abdelrazig YM, Elzain YI, Khalil HO, Ahmed OB, Adam OA. Factors considered by undergraduate medical students when selecting the specialty of their future careers. *Pan Afr Med J*. 2015 Feb 4;20:102. doi: 10.11604/pamj.2015.20.102.4715. PMID: 26090050; PMCID: PMC4458322.
3. Al-Ansari SS, Khafagy MA. Factors affecting the choice of health specialty by medical graduates. *J Family Community Med*. 2006 Sep;13(3):119-23. PMID: 23012131; PMCID: PMC3410059.
4. Cronin FM, Clarke N, Hendrick L, et al. Factors influencing specialty choice and the effect of recall bias on findings from Irish medical graduates: a cross-sectional, longitudinal study. *BMC Med Educ*. 2020;20:485. doi:10.1186/s12909-020-02405-w.
5. Younis MS. Choosing medical specialty: How Arab interns think? *JMSCR*. 2016 Nov 2;04(11):13532-7.
6. Anand R, Sankaran PS. Factors influencing the career preferences of medical students and interns: a cross-sectional, questionnaire-based survey from India. *J Educ Eval Health Prof*. 2019;16:12. doi: 10.3352/jeehp.2019.16.12. Epub 2019 May 15. PMID: 31117329; PMCID: PMC6609296.
7. Kumar A, Mitra K, Nagarajan S, Poudel B. Factors influencing medical students' choice of future specialization in medical sciences: a cross-sectional questionnaire survey from medical schools in China, Malaysia and regions of South Asian Association for Regional Cooperation. *N Am J Med Sci*. 2014 Mar;6(3):119-25. doi: 10.4103/1947-2714.128473. PMID: 24741550; PMCID: PMC3978934.
8. Bhat S, D'souza L, Fernandez J. Factors influencing the career choices of medical graduates. *J Clin Diagn Res*. 2012;6:61-64.
9. Sharma M, Sharma M, Kapoor P, Yadav S. Future aspirations of undergraduate medical students at Government Medical College, Ajmer (Rajasthan). *Indian J Health Sci*. 2016;9:96. doi: 10.4103/2349-5006.183678.
10. Bagga I, Singh A, Chawla H, Goel S, Goyal P, Mondal A. Factors affecting medical students in formulating their career and specialty preferences from northern India. *SJAMS*. 2016;4:3863-3867. doi: 10.21276/sjams.2016.4.11.2.
11. Chawla J, Arora M, Datta K, Singh S, Arora A. Factors affecting the choice of postgraduate specialty among undergraduate medical students: a prospective observational study from India. *South-East Asian J Med Educ*. 2018;12:35. doi: 10.4038/seajme.v12i2.50