

Postgraduate Specialty Preferences and Factors Influencing Career Choice among Medical Interns: A Cross-Sectional Study from a Tertiary Care Teaching Hospital in Uttar Pradesh, India

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Background: Selection of a postgraduate (PG) specialty is one of the most important career decisions made by medical graduates. Specialty preferences influence not only individual career trajectories but also the future availability and distribution of specialists within the healthcare system. Understanding the factors influencing these preferences is essential for workforce planning and medical education reforms.

Objectives: To assess the postgraduate specialty preferences among medical interns and to identify the factors influencing their choice of specialty.

Materials and Methods: A hospital-based cross-sectional study was conducted among medical interns of a tertiary care teaching hospital in Uttar Pradesh. A pre-designed, pre-tested, self-administered structured questionnaire was used to collect information regarding socio-demographic characteristics, preferred postgraduate specialty, first and second specialty preferences, and factors influencing specialty selection. Data were entered in Microsoft Excel and analysed using IBM SPSS Statistics version 25. Descriptive statistics were expressed as frequencies and percentages.

Results: Out of 200 eligible medical interns, 112 participated in the study (response rate: 56.0%). Male interns constituted 59.8% of the study population. Medicine and Allied specialties were the most preferred area of specialization (52.7%), followed by Surgery and Allied specialties (36.6%). Only 10 (8.9%) interns preferred para-clinical specialties and 2 (1.8%) preferred pre-clinical specialties. Passion for the subject (87.5%) was the most frequently reported factor influencing specialty choice, followed by anticipated high income (71.4%), reputation of the specialty (70.5%), and preference for a particular institution (64.3%).

Conclusion: Medical interns demonstrated a strong inclination towards clinical specialties, particularly Medicine and Allied disciplines, while interest in pre-clinical and para-clinical specialties remained low. Passion for the subject was the predominant determinant of specialty choice. Career counselling, mentorship, and initiatives aimed at improving the attractiveness of non-clinical specialties may help achieve a more balanced specialist workforce.

Introduction

The selection of a postgraduate (PG) medical specialty is one of the most important career decisions made by a medical graduate, as it determines future professional practice, career progression, job satisfaction, opportunities for academic growth, and contribution to the healthcare

system.¹ The collective specialty preferences of medical graduates also influence the availability and distribution of specialists, thereby affecting the quality, accessibility, and sustainability of healthcare services.² An equitable distribution of specialists across clinical, pre-clinical, and para-clinical disciplines is therefore essential for maintaining an effective healthcare delivery system and strengthening medical education and research.³

India has witnessed a remarkable expansion in medical education during the past decade, with a substantial increase in the number of medical

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colleges, undergraduate admissions, and postgraduate training seats.⁴ Despite this expansion, competition for postgraduate training remains intense, and a marked imbalance continues to exist in the distribution of specialty preferences among graduating medical students.⁵ Clinical specialties such as General Medicine, General Surgery, Paediatrics, Obstetrics and Gynaecology, Radiodiagnosis, and Orthopaedics consistently attract a large proportion of graduates, whereas comparatively fewer candidates opt for pre-clinical and para-clinical disciplines.⁶ This disproportionate distribution may eventually lead to shortages of medical teachers, laboratory specialists, pathologists, microbiologists, pharmacologists, forensic experts, and public health professionals, thereby affecting both medical education and healthcare delivery.³

The decision to pursue a particular postgraduate specialty is multifactorial and is influenced by a complex interaction of personal, academic, professional, and socioeconomic factors. Personal interest in the subject, perceived aptitude, expected income, prestige associated with the specialty, work-life balance, future career opportunities, mentorship during undergraduate training, family expectations, and availability of postgraduate seats have all been reported to influence specialty choice.^{7,8} The relative importance of these determinants varies across individuals and healthcare systems and may evolve during the internship period as students gain greater clinical exposure and develop clearer career aspirations.⁹

Several studies conducted in India have consistently demonstrated a strong preference for clinical specialties among undergraduate medical students and interns. Godbole *et al.* reported that more than 90% of medical students preferred clinical disciplines, while interest in pre-clinical and para-clinical specialties remained considerably low.⁶ Bansal *et al.* observed that personal interest, anticipated career prospects, expected income, and work-life balance were the major determinants influencing specialty preference among Indian medical students.⁷ Similar findings have been reported from studies conducted in Saudi Arabia, Pakistan, Nigeria, and other countries, indicating that although healthcare systems differ, the determinants of specialty choice remain broadly comparable across settings.⁹⁻¹²

Understanding the career aspirations of medical interns is particularly important because internship represents the stage at which most graduates make definitive decisions regarding postgraduate education. Information regarding specialty preferences and the

factors influencing these decisions is valuable for medical educators, institutional administrators, and policymakers involved in postgraduate medical education and health workforce planning. Furthermore, identifying the reasons behind the low preference for pre-clinical and para-clinical disciplines may help formulate strategies to improve recruitment into these specialties and achieve a more balanced specialist workforce.

Although several studies have explored specialty preferences among medical students in different parts of India, published evidence from tertiary care teaching hospitals in Uttar Pradesh remains limited. Regional variations in educational environment, institutional culture, mentorship, and healthcare needs may significantly influence career choices and therefore warrant local assessment. In this context, the present study was undertaken to assess the postgraduate specialty preferences of medical interns and to identify the factors influencing their choice of specialty at a tertiary care teaching hospital in Uttar Pradesh, India.

Materials And Methods

A hospital-based cross-sectional study was conducted among medical interns undergoing compulsory rotatory internship at the Uttar Pradesh University of Medical Sciences (UPUMS), Saifai, Etawah, Uttar Pradesh, India, a tertiary care teaching hospital providing undergraduate and postgraduate medical education and serving as a major referral centre for the surrounding districts.

Data collection was carried out from 1 October 2023 to 15 October 2023.

Study population

The study population comprised all medical interns undergoing compulsory rotatory internship at UPUMS, Saifai, during the study period.

Inclusion criteria

- Medical interns undergoing compulsory rotatory internship during the study period.
- Interns willing to participate in the study.
- Interns who provided electronic informed consent.

Exclusion criteria

- Interns who did not provide informed consent.
- Incomplete or duplicate questionnaire responses.

A universal sampling technique was adopted, wherein all medical interns undergoing compulsory rotatory internship during the study period were invited to participate in the study. Of the 200 eligible interns, 112

completed the questionnaire, yielding a response rate of 56.0%.

Data were collected using a self-administered structured questionnaire developed after an extensive review of the available literature on postgraduate specialty preferences among medical students and interns. The questionnaire was administered electronically using Google Forms.

The questionnaire consisted of five sections:

Section I

Socio-demographic characteristics, including age, sex, residence, marital status, type of family, parental occupation, family income, and history of known illness.

Section II

Preferred area of postgraduate specialization, categorised as:

- Medicine and Allied subjects
- Surgery and Allied subjects
- Pre-clinical subjects (Anatomy, Physiology, and Biochemistry)
- Para-clinical subjects (Community Medicine, Forensic Medicine, Microbiology, Pharmacology, and Pathology)
- None of the above

Section III

First and second preference for postgraduate specialty.

Section IV

Factors influencing specialty choice, including working hours, expected income, reputation of the specialty, family life and other responsibilities, emotional attachment to the subject, availability of the preferred specialty in the preferred city, family or peer influence, and passion for the subject. Participants were asked to indicate the factors that influenced their choice of postgraduate specialty.

Section V

Factors influencing the selection of a postgraduate institution, including subject preference, college preference, state preference, stipend preference, work culture, infrastructure, seat availability, and recognition status of the postgraduate seat.

Eligible medical interns were informed about the objectives and purpose of the study before data collection. The questionnaire was circulated electronically using Google Forms. The first page of the questionnaire contained the participant information sheet and an electronic informed consent statement. Only participants

who provided informed consent were able to access and complete the questionnaire.

Participation in the study was voluntary. The objectives of the study were explained to all participants before data collection, and electronic informed consent was obtained prior to completion of the questionnaire. Confidentiality and anonymity of the participants were maintained throughout the study, and no personally identifiable information was collected.

Study Variables

Primary outcome variable

Preferred area of postgraduate specialization.

Secondary outcome variables

- First preference for postgraduate specialty.
- Second preference for postgraduate specialty.
- Factors influencing postgraduate specialty choice.
- Factors influencing the selection of a postgraduate institution.

Data were exported from Google Forms into Microsoft Excel for data cleaning and coding and were subsequently analysed using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp., Armonk, NY, USA). Categorical variables were summarised using frequencies and percentages and presented as tables and pie charts.

Results

Of the 200 medical interns approached, 112 (56.0%) submitted complete, computable responses and were included in the analysis. The mean age of participants was 23.8 ± 1.2 years (range: 22–27 years). The distribution was approximately balanced by sex, with 58 males (51.8%) and 54 females (48.2%). The majority (89.3%) were unmarried. Most participants (62.5%) came from urban backgrounds, while 37.5% had a rural domicile. Approximately one-third (33.9%) reported having at least one parent with a medical background (Table 1).

An overwhelming majority of participants—110 out of 112 (98.2%)—expressed a preference for clinical specialties, whereas only 2 participants (1.8%) indicated interest in pre-clinical departments (such as Anatomy, Physiology, or Biochemistry). None of the respondents indicated para-clinical branches (such as Pathology, Microbiology, Pharmacology, or Forensic Medicine) as their first choice, though a small proportion expressed these as secondary preferences.

Within clinical preferences, Medicine and allied specialties (encompassing General Medicine, Pediatrics,

Table 1: Sociodemographic characteristics of participants (N = 112)

Characteristic	Frequency (n)	Percentage (%)
Age Group		
≤23 years	52	46.4
24–25 years	45	40.2
>25 years	15	13.4
Sex		
Male	58	51.8
Female	54	48.2
Marital Status		
Unmarried	100	89.3
Married	12	10.7
Domicile Background		
Urban	70	62.5
Rural	42	37.5
Parental Medical Background of Occupation		
Yes	38	33.9
No	74	66.1

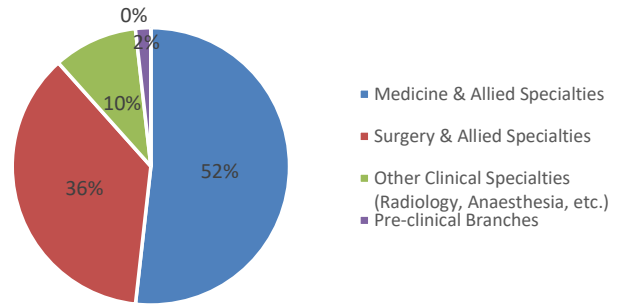
Table 2: Distribution of participants by broad specialty category preference (N = 112)

Specialty category	Frequency (n)	Percentage (%)
Clinical branches (Total)	110	98.2
Medicine & Allied Specialties	58	52.2*
Surgery & Allied Specialties	41	36.6*
Other Clinical (Radiology, Anaesthesia, etc.)	11	9.8*
Pre-clinical branches	2	1.8
Para-clinical branches	0	0.0
Total	112	100.0

*Percentages calculated as proportion of total clinical preferences (n=110) and of total sample (n=112) respectively.

Dermatology, Psychiatry, and allied fields) were preferred by 52.2% of participants. Surgery and allied branches (including General Surgery, Orthopedics, Obstetrics and Gynecology, Ophthalmology, and ENT) were preferred by 36.6%, while the remaining 9.8% preferred other clinical specialties (Table 2)

Figure 1 illustrates the distribution of preferred postgraduate specialty categories among the study participants. Medicine and Allied specialties constituted the largest proportion (52.2%), followed by Surgery and Allied specialties (36.6%). Other clinical specialties

**Figure 1:** Distribution of preferred postgraduate specialty categories among medical interns (n = 112)

accounted for 9.8% of preferences, while only 1.8% of participants preferred pre-clinical specialties.

General medicine was the single most preferred specialty, chosen by 34 participants (30.4%), followed by Pediatrics (14.3%), Obstetrics and Gynecology (12.5%), and General Surgery (11.6%). Other noteworthy preferences included Dermatology and Venereology (6.3%), Orthopedics (5.4%), and Psychiatry (4.5%). The top ten specialty choices are presented in Table 3.

A significant sex-based variation in specialty choice was observed ($\chi^2 = 9.47$; $p = 0.023$). Male interns showed a comparatively higher preference for Surgery and allied specialties, with 24 males (41.4%) opting for surgical branches compared to 17 females (31.5%). Conversely, female interns showed a higher preference for Medicine and allied specialties (55.6% vs. 49.1% among males) and particularly for Obstetrics and Gynecology, which was chosen exclusively by female participants. General Medicine was the leading choice among both sexes. Table 4 illustrates the sex-disaggregated preference distribution.

Table 3: Top individual specialty preferences of medical interns

Rank of preference	Specialty of preference	n	%
1	General Medicine	34	30.4
2	Pediatrics	16	14.3
3	Obstetrics & Gynecology	14	12.5
4	General Surgery	13	11.6
5	Dermatology & Venereology	7	6.3
6	Orthopedics	6	5.4
7	Psychiatry	5	4.5
8	Anaesthesia	5	4.5
9	Radiology	6	5.4
10	Pre-clinical (Anatomy/ Physiology/Biochemistry)	2	1.8

Values are presented as frequencies and percentages of total sample (n=112).

Table 4: Sex-wise Distribution of Specialty Category Preferences (N = 112)

Specialty category	Male n (%)	Female n (%)	p-value
Medicine & Allied	28 (48.3)	30 (55.6)	0.023*
Surgery & Allied	24 (41.4)	17 (31.5)	
Other Clinical	6 (10.3)	5 (9.3)	
Pre-clinical	0 (0.0)	2 (3.7)	
Total	58 (100)	54 (100)	

*Chi-square test; $p < 0.05$ considered statistically significant

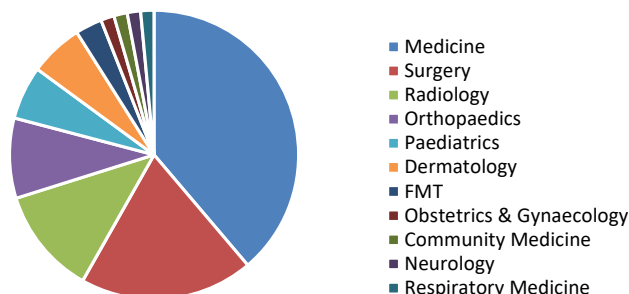
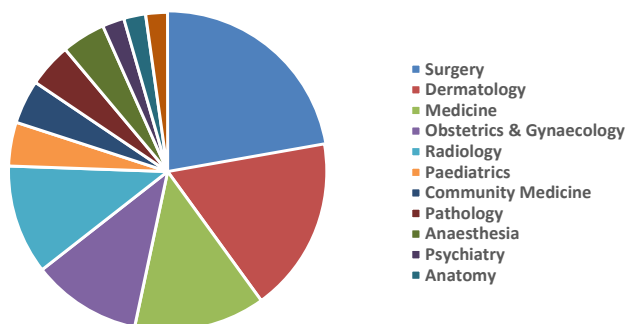
**Figure 2:** Distribution of first preferred postgraduate specialties among male medical interns

Figure 2 depicts the distribution of first preferred postgraduate specialties among male medical interns. Medicine emerged as the most preferred specialty, being selected by approximately two-fifths of the participants, followed by Surgery and Radiology. Orthopaedics, Paediatrics, and Dermatology were preferred by a moderate proportion of interns, while very few participants opted for Obstetrics and Gynaecology, Community Medicine, Neurology, or Respiratory Medicine.

Figure 3 depicts the distribution of first preferred postgraduate specialties among female medical interns. Surgery was the most frequently preferred

**Figure 3:** Distribution of first preferred postgraduate specialties among female medical interns (n = 45)

specialty, accounting for 22.2% of responses, followed by Dermatology (17.8%) and Medicine (13.3%). Obstetrics and Gynaecology and Radiology were each preferred by 11.1% of participants. Smaller proportions of female interns selected Paediatrics, Community Medicine, Pathology, and Anaesthesia (4.4% each), while Psychiatry, Anatomy, and Emergency Medicine were the least preferred specialties (2.2% each). These findings demonstrate that female interns predominantly favoured clinical specialties, with relatively limited preference for pre-clinical and para-clinical disciplines.

The factors influencing postgraduate specialty choice are presented in Table 5. Passion for the subject was the most frequently reported determinant, with 97 (87.4%) participants identifying it as an important influence. Other major determinants included high income (71.2%), reputation/title of the specialty (70.3%), and preference for a specific college to pursue postgraduate training (64.0%). Family life and other responsibilities (58.6%), emotional attachment to the subject (57.7%), availability of the preferred specialty in the preferred city (52.3%), and working hours (44.1%) also influenced specialty choice. Family or peer pressure was the least commonly reported determinant, being identified by only 19 (17.1%) participants.

Discussion

The present study explored postgraduate specialty preferences and the factors influencing career choices among medical interns at a tertiary care teaching hospital in Uttar Pradesh. An overwhelming majority of interns preferred clinical specialties, with Medicine and Allied specialties emerging as the first choice, followed by Surgery and Allied specialties. In contrast, interest in pre-clinical and para-clinical disciplines was minimal. Passion for the subject, expected future income, reputation of the specialty, and preference for a particular postgraduate institution were identified as the most important determinants influencing specialty selection.

The predominance of clinical specialties observed in the present study is consistent with the current trend reported across India and many other countries.^{5,7} Most medical graduates aspire to pursue specialties that provide greater clinical exposure, wider employment opportunities, higher earning potential, and better career advancement.^{5,6,10} In the present study, more than 98% of interns preferred clinical branches, indicating a strong inclination towards direct patient care. Similar findings have been reported by Godbole *et al.* and Bansal *et al.*, who observed that Medicine, Surgery, Paediatrics, and

Table 5: Factors influencing the choice of postgraduate specialty among medical interns

<i>Factor influencing specialty choice</i>	<i>Yes n (%)</i>	<i>No n (%)</i>
Passion for the subject	97 (87.4)	14 (12.6)
High income	79 (71.2)	32 (28.8)
Reputation/Title	78 (70.3)	33 (29.7)
Preference for a specific college to pursue PG	71 (64.0)	40 (36.0)
Family life/Other responsibilities	65 (58.6)	46 (41.4)
Emotional attachment to the subject	64 (57.7)	47 (42.3)
Availability of preferred specialty in the preferred city	58 (52.3)	53 (47.7)
Working hours	49 (44.1)	62 (55.9)
Family/Peer pressure	19 (17.1)	92 (82.9)

Percentages are based on the available responses for each item. One participant did not respond to these questions.

Obstetrics and Gynaecology were consistently the most preferred postgraduate specialties among Indian medical students and interns.^{5,6} This persistent preference for clinical disciplines reflects the changing expectations of young medical graduates regarding career satisfaction, financial security, and professional recognition.^{11,12}

Gender-based differences in specialty preference were also evident. Male interns predominantly preferred Medicine, Surgery, and Radiology, whereas female interns showed greater preference for Surgery, Dermatology, Medicine, and Obstetrics and Gynaecology. Similar gender-specific patterns have been described in previous studies, although the reasons may differ across settings.⁸⁻¹⁰ Female medical graduates often consider factors such as work-life balance, continuity of patient care, and flexibility in practice while selecting a specialty, whereas male graduates may be more inclined towards procedure-oriented specialties or those perceived to offer greater professional prestige.^{8,13} Nevertheless, individual interests and career aspirations appear to play a greater role than gender alone, and the differences observed in the present study should be interpreted within the local educational and cultural context.

An important contribution of the present study is the assessment of factors influencing specialty choice. Passion for the subject emerged as the strongest motivating factor, suggesting that intrinsic interest remains the principal driver of career decisions among medical interns. Financial considerations, particularly expected future income, and the perceived reputation of the specialty were also important determinants. Preference for a particular postgraduate institution, family responsibilities, emotional attachment to the

specialty, availability of the preferred specialty in the desired city, and working hours influenced decision-making to varying degrees. In contrast, family or peer pressure had only a limited influence, indicating that most participants based their career choices on personal aspirations rather than external expectations. These findings are comparable with those reported in previous Indian studies, which identified personal interest, career prospects, and lifestyle considerations as the major determinants of postgraduate specialty preference.^{5,6,8}

One of the noteworthy findings of the present study was the extremely low preference for pre-clinical and para-clinical specialties. Although these disciplines are indispensable for undergraduate medical education, diagnostic services, biomedical research, and public health, they continue to attract very few graduates.^{2,3,9} This imbalance has important implications for the future healthcare workforce. A sustained decline in interest in disciplines such as Anatomy, Physiology, Biochemistry, Pathology, Pharmacology, Microbiology, Forensic Medicine, and Community Medicine may contribute to shortages of medical teachers, laboratory specialists, and public health professionals.^{2,3,13} Strengthening undergraduate exposure to these specialties, expanding mentorship opportunities, and improving career progression and research prospects may help increase their attractiveness among future graduates.^{13,14}

The findings of the present study have important implications for medical education and health workforce planning. Understanding the career aspirations of medical interns can assist policymakers and medical institutions in designing targeted career guidance programmes and developing strategies to achieve a more balanced distribution of specialists across different disciplines.^{3,13,14} Creating greater awareness about career opportunities in pre-clinical and para-clinical specialties, together with improving academic and professional incentives, may encourage more graduates to consider these disciplines.

The present study has certain strengths. It included all eligible medical interns at a tertiary care teaching hospital using a universal sampling approach and employed a structured questionnaire that explored specialty preferences as well as factors influencing career decisions. However, some limitations should be acknowledged. The study was conducted at a single institution, which may limit the generalisability of the findings to other medical colleges. The cross-sectional design reflects preferences at a single point in time and cannot determine whether these preferences change during postgraduate

preparation or subsequent clinical practice. In addition, the information was based on self-reported responses and may therefore be subject to reporting bias. The questionnaire included predefined factors influencing specialty choice and did not provide an opportunity for participants to express additional reasons through open-ended responses. Future multicentric studies involving larger samples and qualitative methods may provide a more comprehensive understanding of postgraduate career preferences among Indian medical graduates.^{6,10}

Overall, the present study provides valuable insights into postgraduate specialty preferences among medical interns and highlights the factors that shape these career decisions. The findings may help medical educators, institutional administrators, and policymakers develop evidence-based interventions that support informed career choices while promoting a more equitable distribution of specialists across the healthcare system.^{3,13,14}

Conclusion

The present study demonstrated that medical interns showed a strong preference for clinical specialties, particularly Medicine and Allied and Surgery and Allied disciplines, whereas pre-clinical and para-clinical specialties attracted very limited interest. Passion for the subject emerged as the most important factor influencing postgraduate specialty choice, followed by expected future income, reputation of the specialty, and preference for a particular postgraduate institution. Family or peer influence played only a minor role in career decision-making.

These findings highlight the need for structured career guidance and mentorship programmes during undergraduate medical training to help students make informed career choices based on their interests and professional aspirations. At the same time, efforts are required to enhance awareness and improve the attractiveness of pre-clinical and para-clinical specialties through greater academic exposure, mentorship, research opportunities, and well-defined career pathways. Such initiatives may contribute to a more balanced distribution of specialists and strengthen the medical education system as well as the healthcare workforce in India.

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Conflict of Interest

The authors declare that there are no conflicts of interest related to this study.

Informed Consent

Participation in the study was voluntary. The objectives of the study were explained to all participants before data collection, and electronic informed consent was obtained from each participant prior to completion of the questionnaire. Confidentiality and anonymity of the participants were maintained throughout the study, and no personally identifiable information was collected.

Limitation

The questionnaire consisted of structured, predefined items and did not include an open-ended question to explore participants' individual reasons for choosing a particular specialty. Future studies incorporating qualitative methods may provide deeper insights into the motivations underlying specialty preferences.

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