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Medical School Students' Perspectives on Community Medicine as a Postgraduate Career: A Cross-Sectional Study

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Research Article

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Posted Date: November 5th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11546357/v1

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Additional Declarations: No competing interests reported.

Original Research Article

Medical School Students' Perspectives on Community Medicine as a Postgraduate Career: A Cross-Sectional Study

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Abstract

Background: Community Medicine plays an important role in disease prevention, health promotion and population-based healthcare. However, postgraduate career preferences among medical students remain concentrated in clinical specialties, with comparatively fewer students considering Community Medicine. Understanding students' perceptions and factors influencing their career preferences may help improve their engagement with the specialty.

Methodology: A cross-sectional study was conducted among **304 MBBS undergraduate students** from different phases at a tertiary medical teaching hospital. Data were collected using a structured, self-administered questionnaire assessing perceptions of Community Medicine, learning experiences, perceived professional roles and competencies, academic difficulties, deterrents and postgraduate specialty preferences. Data were summarized using frequencies and percentages, and binary logistic regression was performed to identify factors associated with interest in Community Medicine. A **p-value <0.05** was considered statistically significant.

Results: Among 304 students, **68.8% were female** and 31.2% were male. **Field visits were the major factor increasing interest in Community Medicine (73.4%)**. Communicable diseases (19.2%), Maternal and Child Health (17.2%) and nutritional health (15.3%) were the most preferred subtopics. Community-oriented healthcare delivery (27.3%) and holistic disease prevention (24.7%) were the most frequently perceived competencies. The commonest academic difficulty was memorization of numerical data and health indicators (35.7%). Only **15.3%** of students expressed an intention to pursue Community Medicine/Public Health as a postgraduate specialty, while Internal Medicine (32.5%) and Surgery (29.2%) were the leading clinical preferences. In binary logistic regression, **gender (OR=1.230, p=0.564), native background (OR=0.995, p=0.988), and factors increasing curiosity towards Community Medicine (OR=1.068, p=0.660)** were not significantly associated with interest in Community Medicine.

Conclusion: MBBS undergraduates recognized the practical relevance of Community Medicine, particularly through field-based learning, but postgraduate preference for the specialty remained limited. Strengthening application-based and field-oriented teaching, research exposure and awareness of diverse

career opportunities may improve students' understanding and engagement with Community Medicine as a postgraduate career.

Keywords: Community Medicine; medical students; undergraduate medical education; field visits; career preference; public health

Introduction

India's healthcare system continues to encounter several challenges, including the coexistence of multiple disease burdens, rising healthcare expenditure and persistent gaps in the health workforce.[1] Shortages of trained personnel, their unequal distribution and imbalances in the availability of different skills remain important concerns for achieving accessible and equitable healthcare. The career choices made by MBBS graduates can therefore influence the future distribution of medical manpower across various specialties.[2]

Community Medicine has a crucial role in addressing health needs at the population level. Professionals trained in this discipline contribute to the identification of health determinants, disease prevention, health promotion, implementation of health programmes and organization of healthcare services. They also play an important role in planning, supervision, programme management and delivery of health services at different levels of the healthcare system. The continuing requirements of the public health system emphasize the need for adequately trained Community Medicine specialists.[3]

Following completion of MBBS, students have multiple career pathways, including clinical practice, government medical services and postgraduate training in different specialties. However, postgraduate preferences among medical students have traditionally been concentrated around a limited number of clinical disciplines, with comparatively fewer students considering Community Medicine. Understanding the reasons underlying these preferences is important, particularly in view of the growing requirement for professionals capable of addressing population-level health problems.[4]

Although Community Medicine/public health is an integral part of undergraduate medical education, students may have varying perceptions regarding its scope, professional opportunities and prospects as a postgraduate specialty. Such perceptions can influence their willingness to select the subject for higher education. Assessing students' views can therefore provide useful information for improving undergraduate exposure to the discipline and creating greater awareness regarding its career opportunities.

Hence, the present study was undertaken to assess the **perspective of MBBS undergraduates towards Community Medicine/public health as a postgraduate course** and to explore their perceptions, interests and factors influencing their consideration of Community Medicine as a postgraduate career option.

Aim: To assess the perspective of MBBS undergraduates towards Community Medicine/public health as a postgraduate course and explore the factors influencing its choice as a career option.

Objectives: 1. To assess the perceptions of MBBS undergraduates towards Community Medicine as a postgraduate specialty.

2.To identify the factors influencing students' preference or reluctance to choose Community Medicine as a postgraduate career.

Materials and Methods

- **Study design**: Cross-sectional Study .
- **Study setting**: Tertiary medical teaching hospital.

- **Study population**: Undergraduate medical students across different phases of training.
- **Sample size**: 304.
  Sample size was calculated using the formula below,
  $Z^2.P.Q/L^2$,
  where, Z is 1.96 (standard deviate for 95% C.I)
  P is prevalence
  Q= 100-P
  L= allowable error.
  Considering P=15% (based on study by Patel et al.[5]) and allowable error as 5%, the sample size was calculated to be 204.
  To improve the precision of the estimates and allow for possible non-response or incomplete responses, a total of 308 MBBS undergraduate students were initially collected. After data cleaning and excluding 4 respondents who did not yield complete formal study consent, a final analytical sample of **304** MBBS undergraduate students was included in the study.

- **Data collection**: Data were collected using a structured, self-administered questionnaire designed to assess the perspectives of MBBS undergraduates towards Community Medicine. The questionnaire included items on demographic characteristics, learning interests and experiences, teaching and pedagogical factors, perceived professional roles and competencies, academic struggles and deterrents, postgraduate specialty preferences, and students' views regarding Community Medicine as a postgraduate specialty.

- **Statistical analysis**: Data were summarized using frequencies and percentages. Binary logistic regression analysis was performed to identify factors associated with students' preference for Community Medicine as a postgraduate specialty. The results were expressed as regression coefficients (B), standard errors, Wald statistics, odds ratios [Exp(B)] and corresponding 95% confidence intervals. A p-value <0.05 was considered statistically significant.

Results

Table 1: Baseline socio-demographic characteristics of medical students (N=304)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	209	68.8
	Male	95	31.2
Academic year	First Year	54	17.9
	Second Year	76	25.0
	Final Year – Part 1 / Third Year	91	29.9
	Final Year – Part 2 / Fourth Year	35	11.7
	Internship Student	48	15.6
Residential status	Day-scholar	145	47.7
	Hosteller	159	52.3

Native background	Urban areas	231	75.9
	Rural areas	73	24.1

A total of 304 valid responses were included in the final analytical dataset after ensuring complete participant informed consent and data completeness. Four records were excluded due to a lack of formal study consent. The baseline socio-demographic characteristics of the medical students are summarized in Table 1. **(Table 1)**

Table 2: Student perceptions of Community Medicine curriculum and learning drivers

Curriculum dimension	**Sub-topic / factor**	**n**	**%**
Core sub-topic	Communicable (infectious) diseases	58	19.2
	Maternal & Child Health	52	17.2
	Nutritional Health	47	15.3
	Epidemiology	33	10.7
	Environmental Health	40	13.0
	Health-care delivery systems	15	5.2
	Occupational Health	19	6.2
	Non-communicable diseases	16	5.2
	Other sub-topics	25	8.1
Learning driver	Field visits	223	73.4
	Research / project studies	25	8.1
	Faculty's teaching style	17	5.5
	Health days & events	15	5.2
	Basics, concepts & medical conferences	24	7.8

Among the core sub-topics of Community Medicine, communicable diseases were the most preferred (58; 19.2%), followed by Maternal and Child Health (52; 17.2%) and nutritional health (47; 15.3%). Environmental health accounted for 40 (13.0%) responses, while epidemiology was preferred by 33 (10.7%) students. Occupational health, health-care delivery systems and non-communicable diseases were reported by 19 (6.2%), 16 (5.2%) and 15 (5.2%) students, respectively, while 25 (8.1%) selected other sub-topics. Among the learning drivers, field visits were the most commonly reported factor, with 223 (73.4%) students identifying them as increasing their interest in learning Community Medicine. This was followed by research/project studies (25; 8.1%), basics, concepts and medical conferences (24; 7.8%), faculty's teaching style (17; 5.5%) and health days and events (16; 5.2%). **(Table 2)**

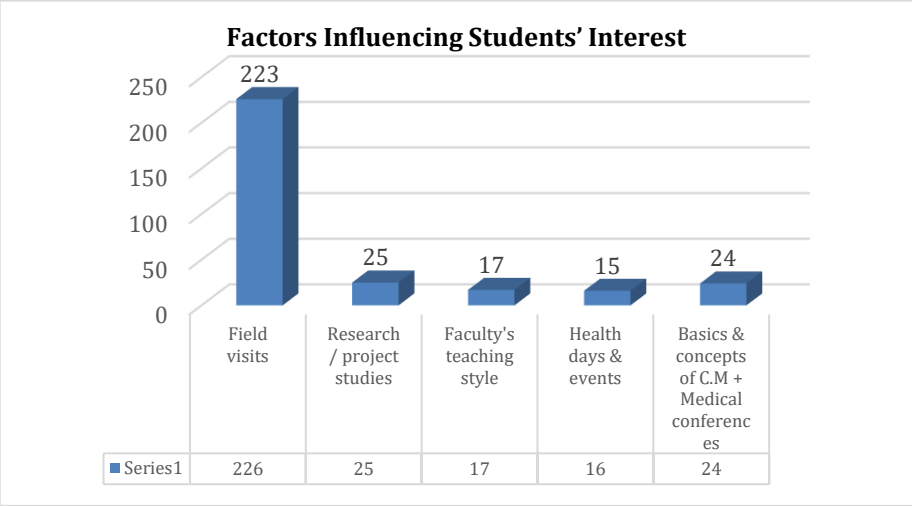


Fig 1: Factors Influencing Students' Interest in Learning Community Medicine

Figure 1 shows that field visits were the predominant factor influencing students' interest in learning Community Medicine, reported by 223 (73.4%) students. Research/project studies were reported by 25 (8.1%) students, followed by 24 (7.8% of students, followed by basic concepts and medical conferences. Faculty's teaching style and health days and events were reported by 17 (5.5%) and 15 (5.2%) students, respectively.

Table 3: Perceived professional roles and competency outcomes in Community Medicine

Dimension	Professional role / competency	n	%
Professional role	Community health care specialist	98	32.1
	Primary Health Physician	52	17.2
	Public Health Project Head / Zonal Officer	14	4.5
	Researcher / Epidemiologist	29	9.7
	NGO Community Medicine Officer	16	5.2
	Specialist Educator / Program Officer / Other	95	31.2
Competency	Community-oriented health care delivery	83	27.3
	Holistic disease prevention approach	75	24.7
	Teamwork and outreach field activities	47	15.6
	Identifying root cause of disease	20	6.5
	Doctor-patient bonding, research & leadership	79	26.0

Perceived Professional Roles and Competencies

Students most commonly perceived Community Medicine as preparing them for Community Health care specialist roles (32.1%), followed by Primary Health Physician roles (17.2%). Community-oriented health care delivery (27.3%) and holistic disease prevention (24.7%) were prominent perceived competencies. **(Table 3)**

Table 4: Academic struggles and deterrents to Community Medicine specialization

Domain	Specific struggle / reason	n	%
Academic / fieldwork	Memorization of numerical data and health indicators	109	35.7
	Limited clinical exposure and bedside procedures	64	21.1
	Rigorous exam preparation and broad syllabus	41	13.6
	Field visits in all weather seasons	30	9.7
	Lengthy textbook definitions and guidelines	60	19.8
Deterrent	Perceived dominant role of non-medical staff	84	27.6
	Lack of / limited access to research projects	36	12.0
	Difficulty in conceptual understanding of subject	30	9.7
	Other deterrents (clinical affinity, career scope)	154	50.6

Academic Struggles and Deterrents

The most frequently reported academic struggle was memorization of numerical data and health indicators (35.7%), followed by limited clinical exposure and bedside procedures (21.1%) and lengthy textbook definitions and guidelines (19.8%). Among deterrents to specialization, other reasons including clinical affinity and perceived career scope were most frequently reported (50.6%), followed by perceived dominance of non-medical staff (27.6%). **(Table 4)**

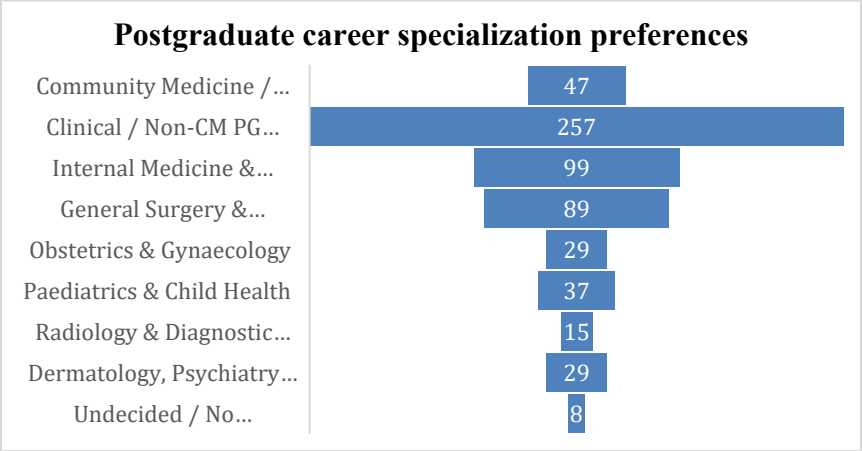


Fig 2: Postgraduate career specialization preferences

Postgraduate Career Preference

Figure 2 shows Only 47 students (15.3%) expressed an intention to choose Community Medicine/Public Health as a postgraduate specialty, while 257 (84.7%) preferred other postgraduate specialties. Among clinical preferences, Internal Medicine and medical specialties accounted for 32.5%, followed by General Surgery and surgical sub-specialties (29.2%).

Table 5: Binary logistic regression analysis of factors associated with students' interest in Community Medicine

Variable	B	S.E.	Wald	df	p	OR [Exp(B)]
Aspects that increased curiosity towards learning Community Medicine	0.065	0.149	0.193	1	0.660	1.068
Native background (original inhabitant)	−0.005	0.380	0.000	1	0.988	0.995
Gender	0.207	0.358	0.333	1	0.564	1.230
Constant	−2.270	0.975	5.423	1	0.020	0.103

B = regression coefficient; S.E. = standard error; df = degrees of freedom; OR = odds ratio. Variables entered: aspects that increased curiosity towards learning Community Medicine, native background and gender.

Binary logistic regression analysis was performed to identify factors associated with students' interest in learning Community Medicine. The variables included aspects that increased curiosity towards learning Community Medicine, native background, and gender. None of the variables showed a statistically significant association with the outcome. The variable representing aspects that increased curiosity had an odds ratio (OR) of 1.068 (B=0.065, p=0.660), indicating no significant association. Native background was also not significantly associated with the outcome (OR=0.995, B=−0.005, p=0.988). Similarly, gender did not show a statistically significant association (OR=1.230, B=0.207, p=0.564). Thus, within this model, gender, native background, and the reported aspects influencing curiosity were not significant predictors of the outcome. **(Table 5)**

Table 6: Selected statements reflecting students' views

Statement / response	n	%
Field visits helps to know more about epidemiology	76	24.7
Community Medicine guidelines used to prevent & cure diseases	52	16.9
Community Medicine subject is crucial at MBBS level	48	15.6
Others	43	14.0
Helps to know epidemiology of disease	28	9.1
CM classes help to know about research methodology	27	8.8
Interest as a researcher in Community Medicine	20	6.5
Interest in knowing principles in Community Medicine	11	3.6
Community Medicine as PG speciality	3	1.0

Statements Related to Learning Community Medicine

The raw responses also included statements reflecting students' views on the subject. The most frequent statement was that field visits helped students understand epidemiology (76 responses), followed by the view that Community Medicine guidelines are used to prevent and cure diseases (52 responses). (**Table 6**)

Discussion

The present study assessed MBBS undergraduates' perspectives towards Community Medicine, including their learning experiences, perceived roles, academic difficulties and postgraduate career preferences. Only 15.3% of students expressed an intention to pursue Community Medicine/Public Health as a postgraduate specialty, while the majority preferred other specialties. This finding is comparable to the findings of Patel et al., [5] who reported a 15% preference for Community Medicine, and Angeline et al.,[6] who reported a preference of 12%. Murugavel et al. [7] reported a comparatively higher preference of 21.8%.

Field visits were the most frequently reported factor increasing interest in learning Community Medicine (73.4%) in the present study. This is consistent with Murugavel et al., [7] who found that 64% of students preferred field demonstrations and 66% considered field trips an interesting learning experience. Angeline et al. [6] similarly reported that 83.7% of students felt that additional field visits or practical assignments were needed to increase interest in the subject. Sadawarte et al.[8] and Sharma et al. [15] also highlighted the importance of practical and field-based teaching in Community Medicine.

Communicable diseases, Maternal and Child Health and Nutritional Health were the most preferred areas in the present study. Angeline et al. [6] similarly reported infectious disease epidemiology, primary healthcare and nutrition among the most interesting areas, while Murugavel et al.[7] reported healthcare delivery and

environmental health as leading areas of interest. These differences may reflect variations in curriculum exposure and study settings.

Students in the present study predominantly perceived Community Medicine in terms of community-oriented healthcare and disease prevention, while relatively fewer identified research and epidemiology as professional roles. Similar observations were reported by Murugavel et al., [7] who identified epidemiology, primary care and disease prevention among the major perceived roles of Community Medicine. Angeline et al. [6] also reported community-focused healthcare and disease prevention as important roles.

Memorization of numerical data and health indicators (35.7%) was the leading academic difficulty in the present study, followed by limited clinical exposure and lengthy definitions/guidelines. This finding closely parallels Murugavel et al., [7] who reported difficulty with definitions and numerical facts, and Angeline et al., [6] who identified remembering numerical facts as the major difficulty. Greater emphasis on application-based, problem-based and experiential learning may therefore improve students' engagement with the subject.

The predominant postgraduate choices in the present study were Internal Medicine and medical specialties (32.5%) and General Surgery and surgical specialties (29.2%). Similar preferences for Medicine and Surgery have been reported by Kar et al.,[9] Patel et al., [5] and Angeline et al. [6] The major deterrent in the present study was preference for other clinical fields and perceived career-related limitations. Similarly, few studies reported Internal Medicine and General Surgery as the most preferred specialties among medical students, with 30.9% and 24.0% choosing these fields, respectively.[10,11,12,13,14]

In contrast to some previous studies, gender and native background were not significantly associated with interest in Community Medicine in the present study. Angeline et al. [6] and Patel et al. [5] reported a higher preference among female students, with statistically significant associations in their respective studies. Such differences may be attributable to variations in study population, institutional setting and other contextual factors.

Overall, the present findings suggest that while students recognize the practical relevance of Community Medicine, its perceived value as a postgraduate career remains comparatively limited. Consistent with observations by Murugavel[7], Angeline[6], Sadawarte, Sharma[15], Kar[9] and Patel[5], greater use of field-based and application-oriented teaching, together with better orientation regarding the diverse career opportunities in Community Medicine, may help students develop a clearer understanding of the specialty.

Strengths and Limitations of the Study

Strengths

- The study included MBBS students from multiple phases of undergraduate medical education, allowing perspectives across different stages of training.
- It assessed multiple aspects of Community Medicine, including learning preferences, perceived roles and competencies, academic difficulties, deterrents, and postgraduate career preference.
- The study included quantitative assessment of factors influencing students' interest and postgraduate choice, providing a broader understanding of their perspective.

Limitations

- The cross-sectional design does not allow assessment of changes in students' perceptions over time.

- As the study was conducted in a single institution, the findings may have limited generalizability to medical students in other settings.

Conclusion

The study found that MBBS undergraduates recognized the relevance of Community Medicine, particularly through field-based learning, with field visits being the most frequently reported factor increasing interest in the subject. Students also identified important community-oriented roles and competencies associated with Community Medicine. However, only 15.3% expressed an intention to pursue Community Medicine/Public Health as a postgraduate specialty, while Internal Medicine and Surgery remained the most preferred clinical specialties. The findings suggest that although students acknowledge the practical and public health relevance of Community Medicine, its perceived career appeal remains limited. Greater emphasis on application-based and field-oriented learning, research exposure, and clearer communication of postgraduate career opportunities may help strengthen students' engagement with the specialty.

Declarations

- **Ethics approval and consent to participate:** The study was approved by the Institutional Ethics Committee. Informed electronic consent was obtained from all participating medical undergraduate students prior to data collection.
- **Consent for publication:** Not applicable.
- **Availability of data and materials:** The datasets generated and analyzed during the current study are the property of the parent medical teaching institution and are subject to ethical restrictions to protect participant confidentiality. Consequently, the raw datasets are not publicly available in open repositories, but the de-identified data are available from the corresponding author upon reasonable academic request.
- **Competing interests:** The authors declare that they have no competing interests.
- **Funding:** Nil. No external financial funding was received for this study.
- **Authors' contributions:** Koviri Bharat Raj (KBR) conceptualized the study design, executed the data collection, performed the statistical analysis, and drafted the primary manuscript text, figures, and tables. Sarella Prashanth Kumar (SPK) reviewed the research protocol, verified the data alignment, and critically revised the manuscript for intellectual content. All authors reviewed and approved the final version of the manuscript.
- **Acknowledgements:** The authors express gratitude to the institution administration and the undergraduate medical students who participated in this evaluation study.

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