e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2026; 18(6); 1153-1162

Original Research Article

Exploring The Perception and Practice of Medical Research Among Future Doctors at Raichur Institute of Medical Sciences, A Government Medical College: A Cross-Sectional Study

Amruta Gangashetti[1], Rahul C. Kirte[2], Pramod[3]

[1]Post Graduate, Department of Community Medicine, Raichur Institute of Medical Sciences (RIMS), Raichur, Karnataka, India

[2]Professor & Head, Department of Community Medicine, Raichur Institute of Medical Sciences (RIMS), Raichur, Karnataka, India

[3]Assistant Professor, Department of Community Medicine, Raichur Institute of Medical Sciences (RIMS), Raichur, Karnataka, India

Received: 01-04-2026 / Revised: 25-05-2026 / Accepted: 12-06-2026

Corresponding Author: Dr. Amruta Gangashetti

Conflict of interest: Nil

Abstract

Background: Medical research is the foundation of evidence-based clinical practice; however, undergraduate research participation in Indian government medical colleges remains critically limited. Understanding the perceptions, attitudes, barriers, and motivating factors of future doctors is essential for designing effective interventions.

Objectives: To evaluate the perception, attitude, perceived barriers, motivating factors, and research practices among final-year MBBS students and medical interns at Raichur Institute of Medical Sciences (RIMS), Raichur, Karnataka, India.

Methods: An observational, descriptive, cross-sectional study was conducted from November to December 2024 at RIMS, Raichur. A total of 218 out of 298 eligible future doctors (3rd Professional Part II MBBS students, batch 2020, and medical interns, batch 2019) responded to a pre-designed, structured, pre-tested self-administered Google Forms questionnaire comprising 27 items across four sections: attitude (eight Likert items), barriers (eight Likert items), motivating factors (five Likert items), and research practices (six Yes/No items). Descriptive statistics were used for the analyses.

Results: The response rate was 73.2% (n = 218/298). The majority recognized research as essential for updating medical knowledge (92.7%) and advancing medical education (88.5%), but only 57.8% found undergraduate research teaching to be satisfactory. The leading barriers were lack of funding support (85.3%), inadequate guidance (84.0%), inadequate skill (84.0%), a demanding curriculum (76.2%), and the time-consuming nature of research (73.0%). The key motivators were teacher inspiration (84.0%), self-motivation (83.5%), and career enhancement (83.1%). Despite these positive attitudes, only 16.5% had conducted research, 5.0% had presented at conferences, and 2.3% had published their work.

Conclusion: Future doctors at RIMS demonstrate strongly positive attitudes towards medical research, contrasted starkly by critically low research engagement. Structural reforms, including mandatory research modules, faculty mentorship programs, and institutional financial support, are urgently needed to bridge the attitude–practice gap.

Keywords: Medical research; Undergraduate medical students; Medical interns; Perception; Attitude; Barriers; Research practice; Government medical college; Karnataka; Cross-sectional study.

DOI: 10.25258/ijcpr.18.6.186

Introduction

Medical research constitutes the systematic pursuit of knowledge underpinning evidence-based clinical practice, health policy formulation, and the advancement of biomedical sciences. Training in research methodology equips future physicians with critical appraisal skills, scientific literacy, and the capacity to generate and translate knowledge into clinical applications. The global recognition of this imperative has intensified calls to integrate meaningful research exposure into undergraduate medical education [1,2]. In high-income countries, structured research programs, mandatory dissertations, and intercalated research degrees have considerably enhanced the research culture

among medical students. Studies from Western Europe, North America, and Australasia consistently report that students who engage in undergraduate research are more likely to pursue academic careers, demonstrate superior scientific reasoning, and contribute to knowledge dissemination through publications and presentations [3,4]. In contrast, developing countries, including India, show substantial divergence between research awareness and actual participation. Das et al., in a recent cross-sectional study among future doctors in Kolkata, documented that while the majority endorsed the importance of research for career advancement and knowledge updating, practical engagement remained far below aspirational levels [1].

A landmark cross-sectional study by Chellaiyan et al. among medical school students in Chennai found that only 36.9% had adequate knowledge about research, only 19.8% demonstrated a formally positive attitude, and only 34.3% had ever conducted any research, with 17.4% having published an article [7]. The disconnect between attitudes and practices is not unique to India. Alghamdi et al. studying senior medical students in Saudi Arabia found that while the majority perceived research as crucial, only approximately 55% had participated in any research activity during their medical training [8]. Similar findings have been reported in Sudan [9], Pakistan [10,11], Arab universities [12], Egypt, and South Africa [15], collectively establishing that positive research attitudes and awareness do not automatically translate into research behavior. Perceived barriers to medical student research engagement are multifactorial and well documented. Time constraints imposed by an extensive didactic and clinical curriculum represent the most consistently cited obstacles across diverse settings [6,7,13]. Additional impediments include inadequate research methodology training, the absence of faculty mentorship, limited institutional infrastructure, insufficient access to funding, and challenges in navigating ethical and administrative approval processes [5,6,12,14]. Pallamparthy and Basavareddy, conducting a study at Sri Devaraj Urs Medical College in Kolar, Karnataka, geographically proximal to the present study, reported that inadequate funding (62%), patient follow-up difficulties (67%), and lack of time (59%) were the dominant barriers, while the overall knowledge score was an encouraging 70% [6]. Giri et al. in Central India identified curricular burden as the leading barrier, cited by 59.5% of postgraduate students [14].

Motivating factors for research participation have received less investigative attention, yet are equally critical in informing positive interventions. Faculty inspiration, peer involvement, career advancement prospects, intrinsic scientific curiosity, and financial incentives have been cited as key motivators in multiple settings [7,8,9]. Osman documented that faculty encouragement and team-based research environments were the most powerful motivators among Sudanese medical students [9]. Nel et al. in South Africa found that the majority of students held research in high regard and were motivated primarily by its perceived contribution to professional development [15]. Siemens et al. in Canada reported that 74% of students believed that research participation was important to their medical education [16].

In India, the National Medical Commission's (NMC) Competency-Based Medical Education (CBME) framework, introduced in 2019, mandates research exposure and the development of scientific thinking as core MBBS competencies [17]. However, its implementation in government medical colleges in Tier-2 and Tier-3 cities remains inconsistent, constrained by faculty shortages, heavy clinical workloads, and limited research infrastructure [5,7]. While Karnataka hosts numerous medical institutions, there is limited published evidence regarding undergraduate research attitudes, specifically from government colleges [6].

The Raichur Institute of Medical Sciences (RIMS), a government medical college in the Raichur district of Karnataka, serves a predominantly rural and economically disadvantaged population. Final-year MBBS students and medical interns at this institution are transitioning to independent clinical practice and postgraduate training, a critical juncture at which research attitudes and competencies significantly shape their future academic and clinical trajectories. However, no published data exist from RIMS or comparable government colleges in this region regarding research perception, practice, and barriers. Therefore, this study was undertaken to fill this evidence gap and provide institution-specific data to guide curriculum planning, faculty development, and policy advocacy for research integration in government medical education in Karnataka.

Objectives

Primary Objective: To evaluate the perception and practice of medical research among future doctors (final-year MBBS students and medical interns) at Raichur Institute of Medical Sciences (RIMS), a government medical college in Raichur, Karnataka.

Secondary Objectives

- To assess the attitudes of future doctors towards medical research using a structured Likert-scale questionnaire.

- To identify the perceived barriers to conducting medical research among the study participants.
- To determine the motivating factors that encourage research participation among future doctors.
- To document the existing research practices (workshop attendance, research conduction, conference presentations, and journal publications) among the study population.

Methodology

Study Design: This was an observational, descriptive, cross-sectional study. This design was appropriate for assessing the prevalence of attitudes, perceptions, barriers, motivating factors, and research practices at a single point in time without experimental manipulation.

Study Setting: The study was conducted at the Raichur Institute of Medical Sciences (RIMS), a government medical college and hospital affiliated with the Rajiv Gandhi University of Health Sciences (RGUHS), Raichur, Karnataka, India. The Department of Community Medicine served as the coordinating body.

Study Population: The target population comprised 'future doctors,' operationally defined as 3rd Professional Part II MBBS students (admission batch 2020) and medical interns (admission batch 2019) enrolled at RIMS during November–December 2024. These groups were selected because they represent the most clinically advanced undergraduate cohort, positioned at the threshold of postgraduate medical training in the country.

Study Duration: Data collection was conducted over approximately eight weeks, from November to December 2024.

Inclusion and Exclusion Criteria: The inclusion criteria were as follows: (i) students enrolled in the 3rd Professional Part II MBBS (batch 2020) at RIMS; (ii) medical interns (batch 2019) at RIMS; and (iii) participants who voluntarily provided informed consent.

The exclusion criteria were as follows: (i) students or interns absent during the data collection period and (ii) participants who declined consent or did not complete the questionnaire.

Sample Size and Sampling Technique: Universal sampling was employed, and all 298 eligible students and interns were invited to participate in the study.

Of these, 218 responded to the questionnaire, yielding a 73.2% response rate. This response rate was considered adequate for a cross-sectional survey-based study.

Study Tool and Data Collection Procedure: A pre-designed, structured, pre-tested self-administered questionnaire was developed by the research team in consultation with subject matter experts and pilot-tested on 20 students not included in the final analysis. The tool was digitized using Google Forms and shared with participants via email and WhatsApp during the study period. The questionnaire comprised four sections.

Section I (Attitude, 8 items): A 5-point Likert scale (Strongly Disagree to Strongly Agree) assessed research as a career option; research and knowledge updating; financial prospects; research and medical education advancement; peer recognition; adequacy of UG curriculum research teaching; importance for specialist training; and time-value perception.

Section II (Barriers, eight items): A 5-point Likert scale assessed perceived impediments, including funding, facilities, curriculum demands, research-related stress, mentorship availability, administrative approval, skills, and time requirements.

Section III (Motivating Factors, five items): A 5-point Likert scale assessed teacher inspiration, peer/family influence, career prospects, financial gains, and self-motivation.

Section IV (Research Practices, six items): Dichotomous (Yes/No) responses documented workshop participation, research conduction, disciplinary breadth of research, conference presentations, journal publications, and data collection participation.

Ethical Considerations: The study was conducted in accordance with the Declaration of Helsinki and the ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants (2017). Ethical clearance was obtained from the Institutional Ethics Committee (IEC) of RIMS, Raichur, prior to data collection. Participation was voluntary, written informed consent was obtained from all participants, and the anonymity and confidentiality of responses were maintained throughout.

Statistical Analysis: Data were extracted from Google Forms and analyzed using IBM SPSS Statistics Version 21.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used. Categorical variables are presented as frequencies and percentages. Likert-scale responses were summarized by computing the proportion of participants selecting 'Agree' and 'Strongly Agree' (positive agreement) for each item. The findings are presented in four structured tables with narrative interpretations.

Results

Response Rate and Participant Profile: Of the 298 eligible future doctors, 218 responded, yielding a response rate of 73.2%. The study population

comprised 3rd Professional Part II MBBS students (batch 2020) and medical interns (batch 2019) at RIMS, Raichur. All subsequent analyses were based on the 218 respondents.

Section I: Attitude Towards Medical Research (Table 1)

Table 1 presents the attitudinal profiles across the eight domains. The predominant finding was the near-universal endorsement of research as essential for updating medical knowledge: 202 participants (92.7%) agreed or strongly agreed with this statement (agree: 140, 64.2%; strongly agree: 62, 28.5%). Almost as overwhelming was agreement that research aids the advancement of medical education, endorsed by 193 (88.5%).

Research importance for specialist training was acknowledged by 159 (72.9%) participants, and 130 (59.6%) agreed that research confers peer recognition. Importantly, 143 (65.6%) rejected the notion that research participation is a waste of time (disagreed or strongly disagreed), further affirming the positive attitudinal orientation of this cohort. More nuanced attitudes were observed in other dimensions. Only 99 participants (45.4%) endorsed research as a future profession, with 79 (36.2%) remaining neutral, reflecting ambivalence about the career viability of research in the Indian context. Satisfaction with undergraduate research teaching was reported by 126 (57.8%) participants, with 58 (26.6%) expressing dissatisfaction, indicating a significant unmet need for improved research education. Financial prospects in a research career were regarded positively by 115 (52.7%), with 34 (15.6%) disagreeing.

Table 1: Distribution of study participants according to their attitude on medical research (n = 218)

Items	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)	Agree + SA n (%)
May consider medical research as future job option	8 (3.7)	32 (14.7)	79 (36.2)	89 (40.8)	10 (4.6)	99 (45.4)
Research is essential for updating knowledge in the medical field	3 (1.4)	5 (2.3)	8 (3.6)	140 (64.2)	62 (28.5)	202 (92.7)
Financial prospects are good in a research career	5 (2.3)	29 (13.3)	69 (31.7)	97 (44.5)	18 (8.2)	115 (52.7)
Research aids in advancement of medical education	4 (1.8)	5 (2.3)	16 (7.4)	138 (63.3)	55 (25.2)	193 (88.5)
Medical students get special attention from peers for doing research	13 (6.0)	18 (8.3)	57 (26.1)	109 (50.0)	21 (9.6)	130 (59.6)
Teaching related to research in existing UG curriculum is satisfactory	15 (6.9)	43 (19.7)	34 (15.6)	112 (51.4)	14 (6.4)	126 (57.8)
Performing research is important to be a specialist	5 (2.3)	12 (5.5)	42 (19.3)	133 (61.0)	26 (11.9)	159 (72.9)
Participating in research is a waste of time*	35 (16.1)	108 (49.5)	33 (15.1)	29 (13.3)	13 (6.0)	143 (65.6)

* For item 8, the Agree + SA column reflects those who Disagreed or Strongly Disagreed (indicating rejection of the notion that research is wasteful, hence a positive attitude). SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree.

Section II: Perceived Barriers to Medical Research (Table 2): Table 2 presents the barrier profiles. Lack of funding support was the most pervasively endorsed barrier (186, 85.3%), followed by inadequate guidance and inadequate skill (183 each, 84.0% each). A demanding curriculum was identified as a barrier by 166

(76.2%), and the time-consuming nature of research by 159 (73.0%).
Difficulty in obtaining administrative approval was endorsed by 135 (62.0%), lack of facilities by 135 (61.9%), and research-related stress by 119 (54.5%).

These findings collectively highlight those structural and institutional deficits — particularly financial, mentorship, curricular, and time-related constraints — constitute the dominant barriers to research engagement among future doctors at RIMS.

Table 2: Distribution of study participants according to their perceived barriers to medical research (n = 218)

Items	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)	Agree + SA n (%)
Lack of funding support is a barrier to research	5 (2.3)	5 (2.3)	22 (10.1)	121 (55.5)	65 (29.8)	186 (85.3)
Lack of facilities is a barrier to research	4 (1.8)	18 (8.3)	61 (28.0)	106 (48.6)	29 (13.3)	135 (61.9)
Demanding curriculum leaves limited scope for research	3 (1.4)	16 (7.3)	33 (15.1)	139 (63.8)	27 (12.4)	166 (76.2)
Medical research adds to existing stress	3 (1.4)	34 (15.6)	62 (28.5)	100 (45.8)	19 (8.7)	119 (54.5)
Lack of guidance is a barrier to research	2 (0.8)	6 (2.8)	27 (12.4)	136 (62.4)	47 (21.6)	183 (84.0)
Difficult to obtain administrative approval for research	2 (0.8)	25 (11.5)	56 (25.7)	114 (52.4)	21 (9.6)	135 (62.0)
Inadequate skill is a perceived barrier to research	2 (0.8)	6 (2.8)	27 (12.4)	136 (62.4)	47 (21.6)	183 (84.0)
Medical research is time-consuming	2 (0.8)	15 (6.9)	42 (19.3)	127 (58.3)	32 (14.7)	159 (73.0)

SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree.

Section III: Perceived Motivating Factors for Medical Research (Table 3): Table 3 details the motivational landscape of research engagement. Teacher inspiration was the most widely endorsed motivator, agreed or strongly agreed upon by 183 participants (84.0%), with the majority selecting 'agree' (142, 65.2%).

Self-motivation was the second most prominent driver (182, 83.5%), with 156 (71.6%) selecting 'agree.' Career advancement was cited by 181 (83.1%).

Financial gains and peer/family inspiration, while comparatively lower at 59.2% and 60.1%, respectively, were still endorsed by a majority.

The dominance of teacher-inspired and self-driven motivation underscores the central role of faculty role models and personal scientific curiosity in fostering research culture.

Section IV: Research Practices (Table 4): Table 4 presents the research practice data, which starkly contrast the positive attitudinal profile. Only 36 participants (16.5%) had ever conducted any form of medical research, and only 34 (15.6%) had attended a research methodology workshops. When considering research undertaken outside the community medicine discipline (where projects may be curricular requirements), only 20 (9.2%) had participated, suggesting that limited overall research exposure may be largely driven by curricular mandates rather than voluntary engagement.

Conference presentation of research was rare, reported by only 11 (5.0%). Journal publication, the highest indicator of research productivity, was achieved by only five (2.3%) participants.

Notably, 30 (13.8%) had participated in research in a data collection capacity only, indicating peripheral exposure to the research process without independent-investigator experience.

Table 3: Distribution of study participants according to perceived motivating factors for medical research (n = 218)

Items	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)	Agree + SA n (%)
Inspiration from teachers is a motivating factor	7 (3.2)	9 (4.1)	19 (8.7)	142 (65.2)	41 (18.8)	183 (84.0)
Inspiration from peers, relatives, and/or family members	8 (3.7)	21 (9.6)	58 (26.6)	117 (53.7)	14 (6.4)	131 (60.1)
Medical research enhances career prospects	4 (1.8)	7 (3.2)	26 (11.9)	147 (67.4)	34 (15.7)	181 (83.1)
Medical research helps in financial gains	7 (3.2)	22 (10.1)	60 (27.5)	107 (49.1)	22 (10.1)	129 (59.2)
Self-motivation drives to perform research	3 (1.4)	5 (2.3)	28 (12.8)	156 (71.6)	26 (11.9)	182 (83.5)

SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree.

Table 4: Distribution of study participants according to their practices of medical research (n = 218)

Items	Yes n (%)	No n (%)
Participation in workshop related to research	34 (15.6)	184 (84.4)
Conducted medical research	36 (16.5)	182 (83.5)
Conducted any research other than community medicine	20 (9.2)	198 (90.8)
Presentation of research study at a conference	11 (5.0)	207 (95.0)
Publication of research in any journal	5 (2.3)	213 (97.7)
Participation in data collection related to research only	30 (13.8)	188 (86.2)

Discussion

This cross-sectional study of 218 future doctors at RIMS, Raichur, provides a detailed characterization of research attitudes, barriers, motivators, and practices in a government medical college setting in Karnataka. The cardinal observation — a strongly positive attitude coexisting with critically low research participation — reflects a pattern documented extensively across India and the developing world and warrants specific interrogation of the mechanisms driving this attitude–practice gap.

The near-universal recognition of research as essential for knowledge updating (92.7%) is consistent with the literature. Das et al. reported that the vast majority of future doctors at a Kolkata medical college endorsed the importance of research for medical practice and career development [1]. Malik et al., studying undergraduate medical students at Nilratan Sircar Medical College, Kolkata, similarly found widespread acknowledgement of research's value [2]. In Chennai, Chellaiyan et al. found that between 31.4% and 83.2% of students held positive views about the value of research, depending on the specific attitudinal dimension assessed [7]. The findings from the present study are at the higher end of this spectrum, which may reflect the seniority of the cohort (final-year students and interns) who had greater exposure to clinical evidence and evidence-based practice principles.

The moderate endorsement of research teaching as satisfactory (57.8%) with a notable proportion of dissatisfied participants (26.6%) is a finding with actionable implications. Malik et al. at Nilratan Sircar Medical College documented significant student dissatisfaction with the formal research training available in the undergraduate curriculum [2]. The NMC CBME framework mandates research competency development, but its implementation at government medical colleges, particularly in resource-constrained settings like Raichur, appears suboptimal. Pallamparthy and Basavareddy, in the only Karnataka-based study of its kind from Kolar, found that 60% strongly agreed that research should be part of the MBBS curriculum [6], reflecting an unfulfilled demand for structured research training among Indian undergraduate medical students.

Research career aspiration was moderate (45.4%), with a large neutral proportion (36.2%), reflecting economic realities in which clinical practice offers far more immediate and substantial financial rewards than academic research in India. This mirrors the findings of Pallamparthy and Basavareddy, who noted that a low proportion of students wished to pursue research careers due to lower monetary benefits [6], and of Park et al. in New Zealand, where career motivation for research was present but not dominant [18]. This has significant implications for research workforce development in India, where incentivizing research

career pathways in academic medicine is an urgent policy priority. The barrier profile at the RIMS shows important convergence with national and international data. Lack of funding (85.3%) as the leading barrier aligns with findings from Pallamparthy and Basavareddy (62% cited inadequate funds) [6], Giri et al. in Central India (inadequate financial budget for research: 57.1%) [14], and Amin et al. in Arab universities, where financial constraints were among the most prominent barriers cited [12]. The prominence of mentorship deficits — both lack of guidance (84.0%) and inadequate skills (84.0%) — as co-equal top barriers is particularly concerning. It reflects the cascading effect of inadequate faculty research mentorship: students who lack guidance do not develop skills, and the absence of skills further reinforces disengagement from research. Khan et al. in Pakistan [11] and Meraj et al. at Shifa College of Medicine [13] both identified inadequate mentorship and perceived complexity of research as dominant barriers. Osman in Sudan found insufficient time (68.3%) as the principal barrier [9], consistent with the 73.0% endorsement of time-consuming nature in the present study.

The motivational hierarchy identified in this study — teacher inspiration (84.0%), self-motivation (83.5%), career prospects (83.1%) — provides clear targets for institutional intervention. The primacy of teacher inspiration converges with multiple studies documenting faculty role modelling as the most powerful driver of student research engagement [7,9,15]. This is an important leverage point: faculty who actively engage in and enthusiastically mentor research not only facilitate student projects but also instill a research-oriented identity that persists into postgraduate training and beyond. Peer/family inspiration (60.1%) and financial gains (59.2%) were comparatively lower, suggesting that intrinsic and professional drivers are primary and extrinsic economic or social incentives are secondary, a finding that carries implications for motivational program design.

Research practice data show the sharpest divergence from the attitudinal profile. The 16.5% research conduct rate in the present study is substantially lower than the 34.3% in Chennai [7] and markedly lower than the 55.3% in Saudi Arabia [8]. The conference presentation (5.0 %) and publication (2.3 %) rates approached near-zero and were among the lowest reported in comparable studies. Chellaiyan et al. reported that 27.6% of the participants made conference presentations and 17.4% published papers [7], while Pallamparthy and Basavareddy documented that 5% of the participants made presentations and 5.6% published papers [6]. These comparisons highlight that RIMS students, particularly in terms of publication, are severely underrepresented in academic research output. The finding that only 9.2% had conducted research outside community medicine further substantiates the interpretation that research participation at RIMS is largely incidental — a byproduct of community medicine posting requirements rather than voluntary, self-directed inquiry. Workshop attendance (15.6%) was low, representing a missed opportunity, as structured research methodology workshops have been consistently shown to improve research knowledge and attitudes in both Indian and international contexts [4,7,19]. The ICMR Short Term Studentship (STS) program and similar institutional research grants represent high-impact, low-cost interventions for government colleges that remain widely under-promoted and underutilized [20]. Devi et al. argued that promoting a research publication culture among medical students in India requires embedding research within formal academic milestones and recognizing student contributions in the academic record [32]. The present data strongly support the call for structural reforms at RIMS and analogous institutions.

The finding that 13.8% participated in research data collection only, without independent investigative experience, is telling: it suggests that students are peripherally exposed to research activity as research assistants or data collectors but are rarely empowered as principal investigators. This assistant-level participation, while providing some familiarization with the research process, does not build the skill set required for independent research design, analysis, and scientific writing. Mentorship models that gradually transition students from participants to co-investigators to lead researchers — analogous to apprenticeship models in surgical or procedural training — should be explored and institutionalized.

Strengths and Limitations

Strengths: This study is among the very few to examine research perception and practice specifically at a government medical college in Karnataka, providing institution-specific baseline data that are directly actionable for curriculum reform and policy advocacy in medical education. The comprehensive questionnaire covering four domains (attitude, barriers, motivation, and practice) offers a holistic assessment absent in many single-domain studies. Digitization via Google Forms ensured standardized data capture with minimal transcription errors. Targeting final-year MBBS students and interns, the most clinically experienced undergraduate cohort, maximizes the practical relevance of the findings to transitional medical education policy.

Limitations: The single-center design at one government medical college in Karnataka limits the generalizability of the findings. The cross-sectional

design precludes any causal inference. A response rate of 73.2%, while adequate, introduces non-response bias risk. Self-reported data are susceptible to social desirability bias. Detailed sociodemographic disaggregation (gender, academic performance, family background) was unavailable and may have revealed important moderating factors in the study.

Future studies should adopt multicenter designs, include private medical college comparators, incorporate objective research output metrics, and employ mixed-methods approaches with in-depth qualitative interviews to explore nuanced determinants of the attitude–practice gap.

Conclusion

This cross-sectional study provides compelling institution-specific evidence that future doctors at RIMS, Raichur, demonstrate a strongly positive attitude towards medical research, recognizing its indispensable role in knowledge updating, medical education, and specialist training. Teacher inspiration and self-motivation are the most powerful drivers of research engagement. However, this positive attitudinal profile is contradicted by severely low research practice: only 16.5% have conducted research, 5.0% have presented at conferences, and 2.3% have published work. This profound attitude–practice gap is structurally underpinned by deficits in funding, faculty mentorship, research skills training, and time availability within the demanding undergraduate curricula.

From an educational standpoint, these findings underscore the urgent necessity of institutionalizing research as an integral, formally assessed component of the MBBS curriculum at RIMS and analogous government medical colleges. Establishing dedicated faculty research mentorship programmes, creating institutional student seed grants, facilitating biomedical database access, and recognizing research presentations and publications as formal academic milestones are critical steps. The NMC CBME framework provides the regulatory architecture for these reforms but demands robust institutional commitment and resource allocation to be operationalized.

At the policy level, the State Health Education Department, RGUHS, and RIMS administration should consider mandating structured student research projects as graduation requirements, expanding ICMR STS promotion, and establishing streamlined IEC approval processes for student-led research. Future multicenter studies encompassing both government and private medical colleges across Karnataka and other states are warranted to develop regionally representative evidence for this issue.

The present study establishes a critical baseline from which RIMS can measure the impact of forthcoming interventions and serves as a call for sustained strategic action to cultivate a culture of scientific inquiry among India's future doctors.

Strobe Compliance Statement: This manuscript was prepared in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies. A STROBE checklist is available from the corresponding author upon request.

Declaration of Competing Interests: None declared.

Funding: No external funding was received for this study.

Acknowledgements: The authors sincerely thank the final-year MBBS students and medical interns of RIMS, Raichur, for their voluntary participation and the faculty of the Department of Community Medicine for their support.

References

1. Das S, Bandyopadhyay K, Das A, Chatterjee S, Sarkar TK. Perception and practice of medical research amongst future doctors in a Medical College of Kolkata: A cross-sectional study. J Clin Sci Res. 2024;13:44-51.
2. Malik S, Das S, Dolai S, Bhaumik S, Chanda S, Debnath S, et al. Knowledge and perception regarding research among undergraduate medical students: a cross-sectional study in Nilratan Sircar Medical College, Kolkata. ESRF Res J. 2024;1(2):1-9.
3. Burgoyne LN, O'Flynn S, Boylan GB. Undergraduate medical research: The student perspective. Med Educ Online. 2010;15:5212. doi: 10.3402/meo.v15i0.5212. PMID: 20844608.
4. Vujaklija A, Hren D, Sambunjak D, Vodopivec I, Ivanis A, Marusic A, et al. Can teaching research methodology influence students' attitude toward science? J Investig Med. 2010;58:282-6. doi: 10.2310/JIM.0b013e3181cb42d9. PMID: 20130460.
5. Vairamani CR, Akoijam BS. Knowledge, attitude and perceived barriers towards conducting research among students in a medical college, India. Int J Community Med Public Health. 2018;5:806-10.
6. Pallamparthy S, Basavareddy A. Knowledge, attitude, practice, and barriers toward research among medical students: A cross-sectional questionnaire-based survey. Perspect Clin Res. 2019;10(2):73-8. doi: 10.4103/picr.PICR_1_18. PMID: 31008073.
7. Chellaiyan VG, Manoharan A, Jasmine M, Liaquathali F. Medical research: Perception

and barriers to its practice among medical school students of Chennai. J Educ Health Promot. 2019;8:134. doi: 10.4103/jehp.jehp_464_18. PMID: 31463319.
8. Alghamdi KM, Moussa NA, Alessa DS, Alothimeen N, Al-Saud AS. Perceptions, attitudes and practices toward research among senior medical students. Saudi Pharm J. 2014;22(2):113-7. doi: 10.1016/j.jsps.2013.02.006. PMID: 24648822.
9. Osman T. Medical students' perceptions towards research at a Sudanese University. BMC Med Educ. 2016;16:253. doi: 10.1186/s12909-016-0776-0. PMID: 27682259.
10. Sabzwari S, Kauser S, Khuwaja AK. Experiences, attitudes and barriers towards research amongst junior faculty of Pakistani medical universities. BMC Med Educ. 2009;9:68. doi: 10.1186/1472-6920-9-68. PMID: 19917109.
11. Khan H, Khan S, Iqbal A. Knowledge, attitudes and practices around health research: The perspective of physicians-in-training in Pakistan. BMC Med Educ. 2009;9:46. doi: 10.1186/1472-6920-9-46. PMID: 19615071.
12. Amin T, Kaliyajan F, Abdulatheem EA, Majed M, Khanjaf H, Mirza M. Knowledge, attitudes and barriers related to participation of medical students in research in three Arab Universities. Educ Med J. 2012;4:e47-55.
13. Meraj L, Gul N, Zubaidazain IA, Akhter I, Iram F, Khan AS, et al. Perceptions and attitudes towards research amongst medical students at Shifa College of Medicine. J Pak Med Assoc. 2016;66(2):165-9. PMID: 26819161.
14. Giri PA, Bangal VB, Phalke DB. Knowledge, attitude and practices towards medical research amongst the postgraduate students of Pravara Institute of Medical Sciences University of Central India. J Family Med Prim Care. 2014;3(1):22-4. doi: 10.4103/2249-4863.130263. PMID: 24791231.
15. Nel D, Burman RJ, Hoffman R, Randera-Rees S. The attitudes of medical students to research. S Afr Med J. 2014;104(1):33-6. doi: 10.7196/samj.7058. PMID: 24388084.
16. Siemens DR, Punnen S, Wong J, Kanji N. A survey on the attitudes towards research in medical school. BMC Med Educ. 2010;10:4. doi: 10.1186/1472-6920-10-4. PMID: 20096112.
17. National Medical Commission. Competency-Based Medical Education Curriculum for MBBS. New Delhi: NMC; 2019.
18. Park SJ, McGhee CN, Sherwin T. Medical students' attitudes towards research and a career in research: An Auckland, New Zealand study. N Z Med J. 2010;123(1323):34-42. PMID: 20930908.
19. Noorelahi MM, Soubhanneyaz AA, Kasim KA. Perceptions, barriers, and practices of medical research among students at Taibah College of Medicine, Madinah, Saudi Arabia. Adv Med EducPract. 2015;6:479-85. doi: 10.2147/AMEP.S83978. PMID: 26185479.
20. Indian Council of Medical Research. Short-Term Studentship (STS) Programme. New Delhi: ICMR; 2024. Available from: https://www.icmr.gov.in.
21. Chatterjee S, Adhikari A, Haldar D, Biswas P. Perception, awareness and practice of research-oriented medical education among undergraduate students of a medical college in Kolkata, West Bengal. Natl Med J India. 2016;29(2):94-7. PMID: 27586217.
22. Memarpour M, Fard AP, Ghasemi R. Evaluation of attitude to, knowledge of and barriers toward research among medical science students. Asia Pac Fam Med. 2015;14(1):1. doi: 10.1186/s12930-015-0019-2. PMID: 25705121.
23. Al-Hilali SM, Al-Kahtani E, Zaman B, Khandekar R, Al-Shahri A, Edward DP, et al. Attitudes of Saudi Arabian undergraduate medical students towards health research. Sultan Qaboos Univ Med J. 2016;16(1):e68-73. doi: 10.18295/squmj.2016.16.01.012. PMID: 26909216.
24. Siamian H, Mahmoudi R, Habibi F, Latifi M, Zare-Gavgani V. Students' attitudes towards research at Mazandaran University of Medical Sciences in 2015. Mater Sociomed. 2016;28(6):468-72. doi: 10.5455/msm.2016.28.468-472. PMID: 28144202.
25. Pawar DB, Gawde SR, Marathe PA. Awareness about medical research among resident doctors in a tertiary care hospital: A cross-sectional survey. Perspect Clin Res. 2012;3(2):57-61. doi: 10.4103/2229-3485.96446. PMID: 22701821.
26. Djulbegovic B, Guyatt GH. Progress in evidence-based medicine: A quarter century on. Lancet. 2017;390(10092):415-23. doi: 10.1016/S0140-6736(16)31592-6. PMID: 28215660.
27. Moraes DW, Jotz M, Menegazzo WR, Menegazzo MS, Veloso S, Machry MC, et al. Interest in research among medical students: Challenges for the undergraduate education. Rev Assoc Med Bras. 2016;62(7):652-8. doi: 10.1590/1806-9282.62.07.652. PMID: 27925045.
28. Ibrahim Abushouk A, Nazmy Hatata A, Mahmoud Omran I, Mahmoud Youniss M, Fayez Elmansy K, Gad Meawad A. Attitudes and perceived barriers among medical students

towards clinical research: A cross-sectional study in an Egyptian medical school. J Biomed Educ. 2016;2016:1-7. doi: 10.1155/2016/5490215.
29. Laidlaw A, Aiton J, Struthers J, Guild S. Developing research skills in medical students: AMEE Guide No. 69. Med Teach. 2012;34(9):754-71. doi: 10.3109/0142159X.2012.704438. PMID: 22938668.
30. Devi V, Abraham RR, Ramnarayan K. Promoting research and publication culture among medical students in India. Adv Physiol Educ. 2010;34(3):128-30. doi: 10.1152/advan.00014.2010. PMID: 20826782.
31. Amgad M, Tsui MMK, Liptrott SJ, Shash E. Medical Student Research: An Integrated Mixed-Methods Systematic Review and Meta-Analysis. PLoS One. 2015;10(6):e0127470. doi:10.1371/journal.pone.0127470. PMID:2608639 .
32. Nikolic D, Jovanovic M, Jovicic V, Vukovic M. Contemporary global perspectives of medical students on research during undergraduate medical education: A systematic literature review. Syst Rev. 2018;7(1):150. doi: 10.1186/s13643-018-0815-x. PMID: 30285894.