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"KNOWLEDGE AND ATTITUDE TOWARDS RESEARCH AMONG MBBS UNDERGRADUATES OF GOVERNMENT MEDICAL COLLEGE SRINAGAR"

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ABSTRACT

Background: Early exposure to research is essential for developing critical appraisal skills and promoting evidence-based practice among medical undergraduates, yet engagement remains suboptimal in many low- and middle-income settings, including India. This study assessed knowledge, attitudes, and perceived barriers towards research among MBBS undergraduates at Government Medical College (GMC) Srinagar.

Methods: A descriptive cross-sectional, questionnaire-based study was conducted among 145 MBBS students at GMC Srinagar between 18 August and 9 September 2025. A 20-item, self-administered questionnaire, adapted from previously validated tools, evaluated research knowledge, attitudes, and barriers. Data were analysed using descriptive statistics in Microsoft Excel and presented as frequencies and percentages.

Results: Although 64.1% of students correctly identified formulating a research question as the first step in research and 55.9% agreed that research promotes critical thinking, only 42.8% believed research is essential for becoming better doctors. Awareness of key concepts such as research ethics and the role of the Institutional Ethics Committee was limited, with only 41.4% correctly identifying the approving body for human research in India. Motivation towards research was low, with 31% reporting feeling motivated, while 35.2% felt stressed by research-related tasks. Major perceived barriers included study burden (75.1%), lack of mentorship (74.4%), inadequate financial support (64.2%), insufficient statistical support (74.4%), and unstable internet connectivity, reflecting local infrastructural constraints.

Conclusion: MBBS undergraduates at GMC Srinagar exhibit generally positive attitudes towards research but demonstrate notable knowledge gaps and face substantial systemic barriers that hinder active participation. Integrating structured research methodology training, formal mentorship,

protected time, and infrastructural strengthening into the undergraduate curriculum may enhance research competence and foster a sustainable research culture among future clinicians.

Keywords
• Medical student research
• Knowledge attitudes
• Research barriers
• Undergraduate curriculum
• Mentorship gaps
• GMC Srinagar

INTRODUCTION

Medical research is a cornerstone of evidence-based medicine, enabling advancements in prevention, diagnosis, and treatment [1]. Early involvement in research fosters critical thinking, problem-solving ability, and scientific curiosity among medical students, while also improving academic performance and career opportunities. Despite its importance, active participation of undergraduate medical students in research remains limited, particularly in low- and middle-income countries including India.

In India, research involvement among medical students is hampered by multiple barriers such as lack of research methodology training, limited mentorship, insufficient time due to academic workload, and scarce financial or institutional support. Studies from different regions have highlighted additional challenges, including low confidence, lack of awareness of opportunities, inadequate infrastructure, and fear of publication rejection [2,3]. On the other hand, enablers like supportive faculty, structured workshops on research methods, recognition and incentives for research work, and encouragement from peers and mentors have been shown to increase student participation. There is therefore a pressing need to explore these attitudes, barriers, and enablers comprehensively to strengthen research culture in medical institutions.

Knowledge about research encompasses awareness of methodology, ethics, publication process, and available opportunities[4]. Attitude reflects personal interest in research, willingness to participate, readiness to encourage peers, and confidence in balancing research with academics. Both knowledge and attitude are shaped by multiple factors including institutional environment, mentorship, curriculum exposure, previous experience, and availability of resources. By identifying and addressing barriers while enhancing enablers, medical colleges can empower students to become future clinician-scientists contributing to medical innovation and public health [5].

RATIONALE

Research proficiency is fundamental for practicing evidence-based medicine, enabling physicians to integrate clinical expertise with the best available scientific evidence for patient care. However, multiple studies across India, including in regions like Jammu and Kashmir, have identified persistent gaps in medical research skills and practice. These gaps are compounded by factors such as time constraints, lack of adequate knowledge and methodological training, inadequate mentorship, and resource shortages, which collectively undermine active participation in research activities.

At Government Medical College (GMC) Srinagar, addressing this issue is particularly important given the region's unique health challenges and resource limitations. Integrating research methodology into undergraduate curricula through workshops, problem-based learning, and mandatory projects has been shown to improve competence and preparedness among MBBS students at GMC Srinagar. It is vital to generate valuable insights to guide curricular reforms, capacity building, and support mechanisms that emphasize epidemiology, health systems, and preventive medicine. This, in turn, can strengthen the culture of research that is essential for

improving healthcare outcomes in the region.

Moreover, strengthening research proficiency among medical students is not only essential for academic growth but also for addressing local healthcare needs through context-specific evidence. In regions like Jammu and Kashmir, where unique demographic, environmental, and epidemiological factors exist, developing regionally relevant research can help generate solutions tailored to the population's requirements. By cultivating a research-oriented mindset early in medical education, students can contribute to innovation, policy formulation, and community health improvements, thereby bridging the gap between global scientific knowledge and local healthcare challenges.

REVIEW OF LITERATURE

A study by Gore A.D. and Kulkarni M. (2024) at Bharati Vidyapeeth Medical College, Sangli, assessed 425 undergraduate students from medical and allied fields to evaluate awareness regarding research work. The study found that 82.6% supported making research compulsory, with medical students showing greater interest (69.2%). Awareness was higher among students from non-English medium and government institutions, while lower socioeconomic status predicted better awareness. Despite 45.2% having research experience, only 10.6% felt confident in interpreting findings. The study highlighted the need for structured training and institutional support, with NMC's integration of research into CBME expected to enhance research culture[6].

A study conducted by Imane Chenfouh et al. (2024) at Oujda Medical School, Morocco, aimed to evaluate the knowledge, attitude, and perceived barriers of medical students towards research. The crosssectional study included all medical students from first to seventh year, and data were collected through a self-administered online questionnaire. A total of 754 responses were obtained. The knowledge score was found to be relatively low, with a median of 2 across 8 questions, indicating poor understanding of research basics. Despite this, most students expressed a positive attitude towards research, with a median score of 3.26 on the ATR scale. Major barriers identified were time constraints (75.6%), insufficient funding (75%), and inadequate laboratory facilities (72.6%). The study concluded that Moroccan students showed a high level of positive attitude towards research but low knowledge scores, highlighting the need to address these barriers in order to improve engagement in undergraduate research [7].

A study was conducted by the Medical Research Volunteer Program (MRVP) at the American University of Beirut (AUB) in 2019 to assess undergraduate students' perception, attitude, practice, and barriers towards medical research. A total of 523 students were surveyed, of which about half (51.5%) were premedical students. Only 43.6% of the participants were aware of the MRVP at their university. The mean scores for attitude, perception, practice, and barriers were found to be 3.58, 4.35, 3.58, and 2.60 respectively on a 5-point Likert scale. Lack of mentoring and guidance was identified as the major barrier to research involvement. The study concluded that students showed interest in medical research and recognized its importance, highlighting that structured undergraduate research programs are essential in guiding future career development and should be consistently monitored to ensure a research-oriented academic environment [8].

A study by Memarpour et al. (2015) assessed knowledge, attitude, and barriers toward research among medical science students. Findings revealed adequate knowledge but only moderate attitudes, with female and undergraduate students scoring higher. Major barriers included lack of time, funding, mentorship, and research training. Similar studies globally also report that while students recognize the value of research, heavy academic workload and limited institutional support hinder participation. Structured training and integration of research into curricula have shown to improve involvement. Overall, literature highlights the need for mentorship, resources, and protected time to enhance student research engagement [9].

A study was conducted by Giri P.A. et al. (2013) at Pravara Institute of Medical Sciences, Central India, to assess the knowledge, attitude, and practices regarding health research among postgraduate students. This cross-sectional study was carried out between August and October 2012, including 116 postgraduates. The results revealed that only 18.9% of students were aware of the concept of research hypothesis, while 17.2% and 21.5% knew the full forms of MEDLARS and MEDLINE respectively. Despite this, 91.4% of participants believed that patient outcomes improve with continued medical research, and 70.7% expressed willingness to participate in workshops on research methodology. Major obstacles reported included lack of time due to a vast curriculum (59.5%), lack of research curriculum (25%), and inadequate facilities (25.8%). The study concluded that although postgraduate students had inadequate knowledge, they demonstrated positive attitudes towards research. It emphasized that postgraduate training and facilities require significant improvement to encourage meaningful research [10] .

AIM

Knowledge and Attitude towards research among MBBS undergraduates of Government Medical College Srinagar.

OBJECTIVES

1. To determine the knowledge of MBBS undergraduates of Government Medical College Srinagar towards research.
2. To determine the attitude of MBBS undergraduates of Government Medical College Srinagar towards research.
3. To identify the common barriers faced by MBBS undergraduates of Government Medical College Srinagar during conducting/participating research projects.

METHODOLOGY

Study design: The study is a descriptive cross-sectional questionnaire-based study conducted in Government Medical College Srinagar.

Study settings: The research was conducted among undergraduate students of Government Medical college, Srinagar.

Duration of study: The study started on the date 18 August 2025 and ended on 9th September 2025, which included 1 week of protocol writing, 1 week of data collection,1 week of analysis and 1 week of final report writing.

Participants: The study participants included the undergraduate medical students of Government medical college Srinagar

Sociodemographic Variables: Age, Gender, Batch

Inclusion criteria: undergraduate medical students of Government Medical college Srinagar

Exclusion criteria: those who didn't consent to participate

Study tool: A questionnaire was designed based on similar studies done for assessing the knowledge and attitude towards research among medical students. The questionnaire consisted of 20 questions, which was circulated through messaging platforms.

Sample size: To determine the appropriate sample size for this study, we used the standard formula for sample size calculation in prevalence studies.

The prevalence was set on 0.7 based on previous study conducted in Maharashtra, margin of error was set at 5%

The formula n = (4 * p * (1 - p)) / d^2

Using these parameters, the sample size was calculated, which came out to be 105 Expecting 10% non-response rate. The final sample size is approximately 115.

Strategy and approval:
The study was approved by mentors of the department of community medicine, and consent was sought from the participants while maintaining anonymity and confidentiality.

Statistical analysis:
The data collected was analysed on Microsoft Excel and results were represented in tables and charts on Microsoft Word.

ANALYSIS:

- Total study participants=145

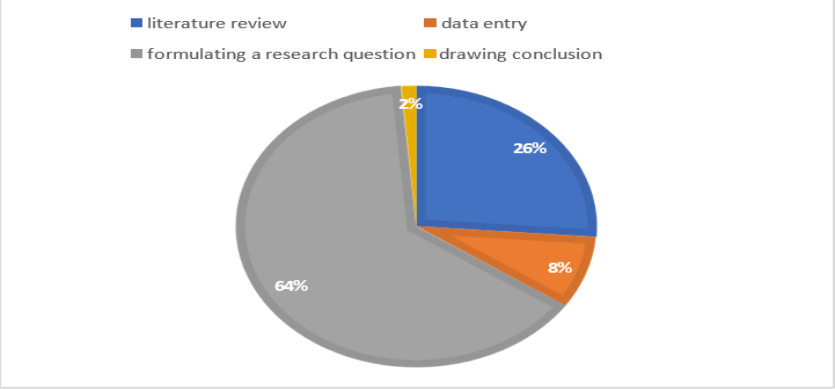
Table no 1: Sociodemographic characteristics of study participants.

Characteristics	Frequency	Percentage (%)
Age 17-19		
20-22	10	6.8
23-25	101	69.6
25-27	32	22
	2	1.3
Gender Male		
Female	71	49.6
	74	51.7
Year of study 1st Year		
2nd Year 3rd Year Final Year	22	15.1
Internship	13	8.9
	98	67.5
	7	4.8
	5	3.4
Institution		
GMC SRINAGAR	145	100

Table no. 2 distribution of students regarding knowledge about research

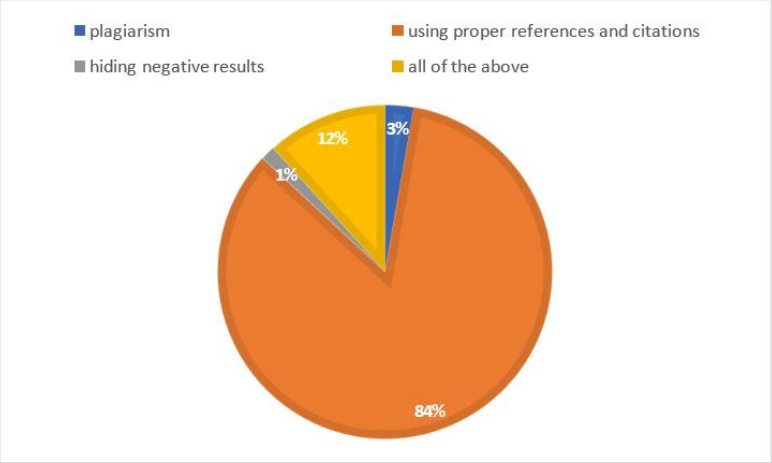
Knowledge about	Aware	Not aware
first step of research	130(90%)	15(10%)
good research practice	122(84%)	23(16%)
Literature review	54(37%)	91(63%0
research ethics	83(57%)	62(43%)
purpose	62(42%)	83(58%)

Fig.no. 1 – distribution of students as per their knowledge about first step of research.



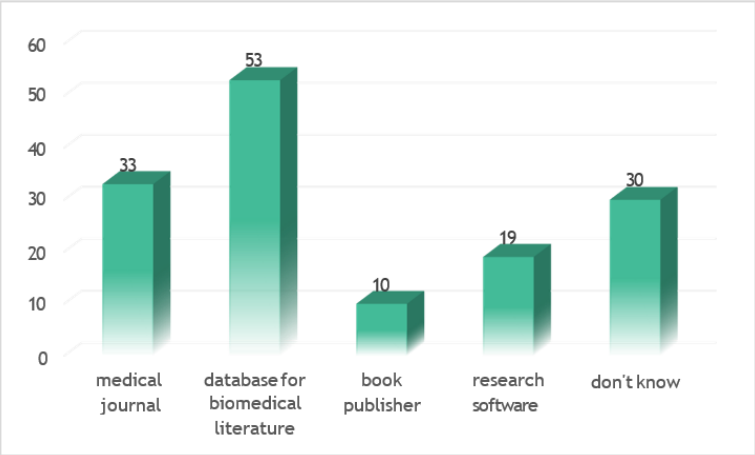
students (64%) were Majority of the students i..e., 93 correct .

Fig.no.2 – distribution of participants as per their knowledge about good research practice.



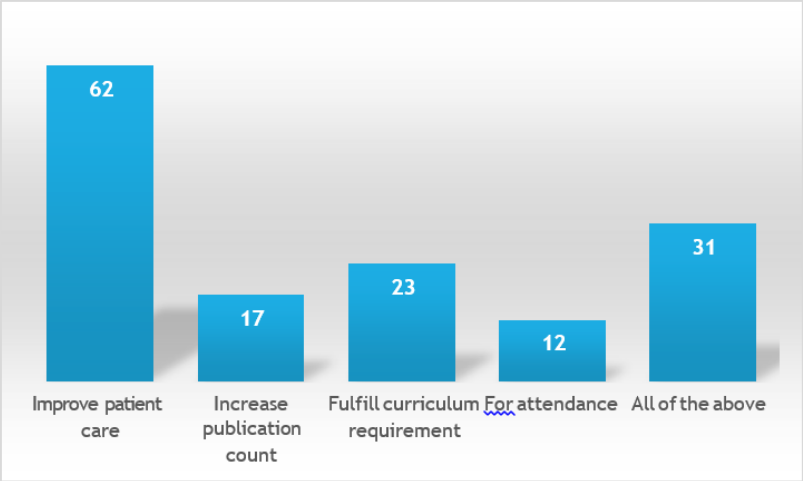
No. of students that were aware about good research practice = 122(84%)

Fig.no. 3- distribution of participants as per their knowledge about different sources of literature review such as PubMed, Google Scholar, Scopus, etc.



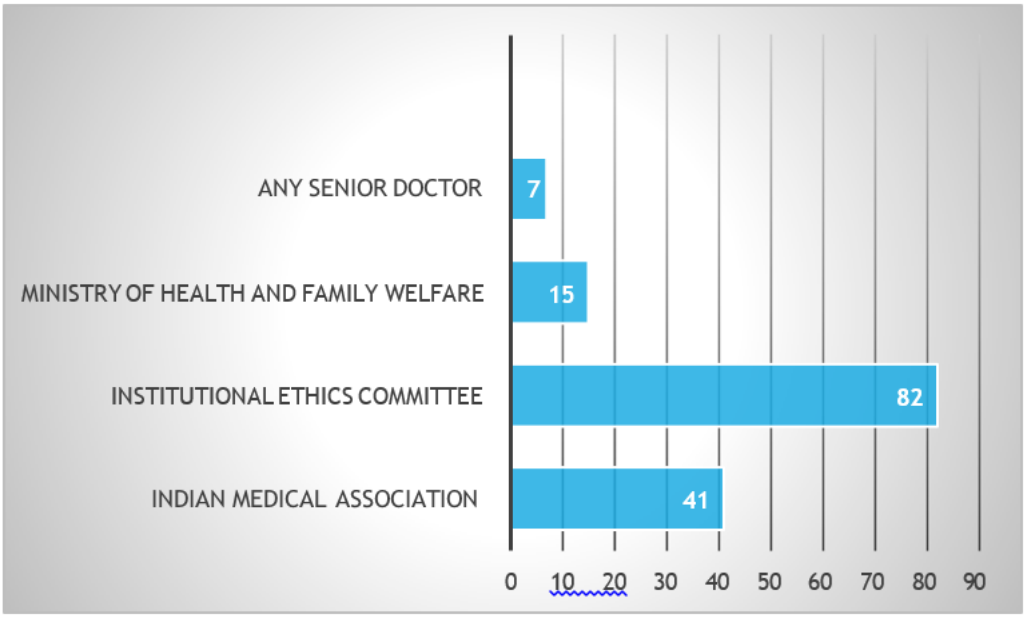
Majority were aware about the use of literature, although a considerable proportion was not aware with disparity between the batches.

Fig no. 4- distribution of the participants as per their knowledge about the purpose of medical research



A considerable proportion knew about the main purpose.

Fig no. 5- distribution of the participants as per their knowledge about the body that approves medical research involving humans in India.

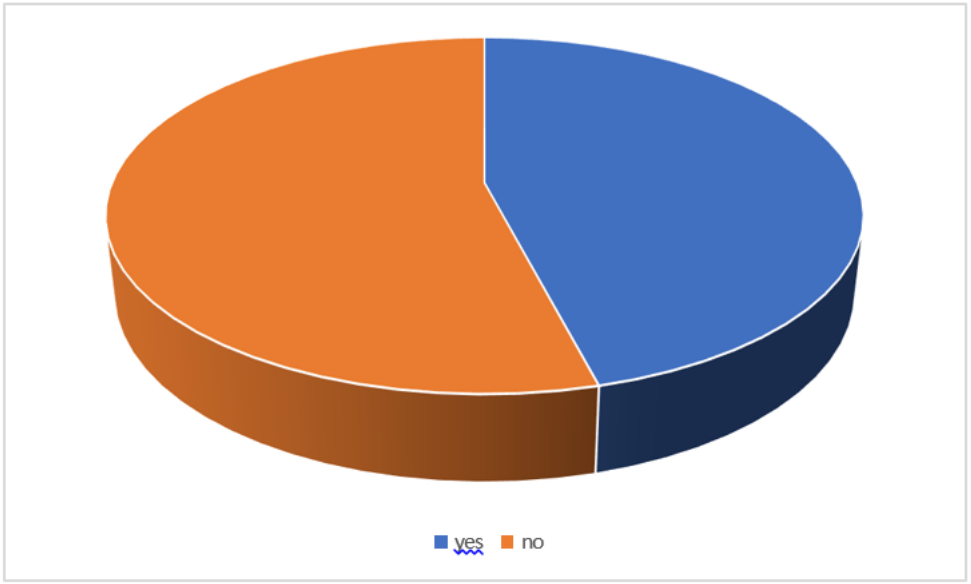


A high proportion was knowledgeable about the correct option.

Table 3 showing attitude towards research among respondents N=145

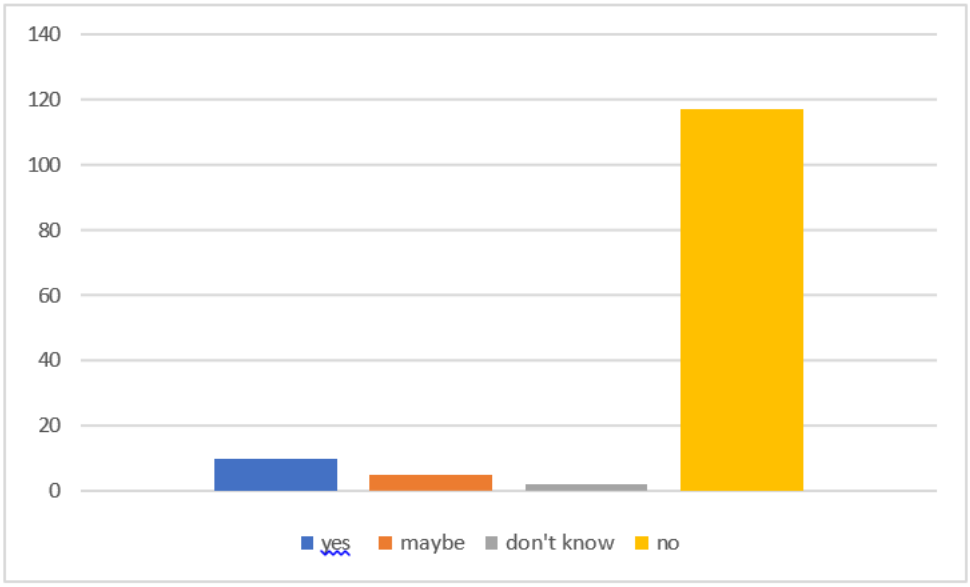
Question	Yes		No		Maybe		Do not know	
Ever been a part of a research project	68	47%	80	53%				
If the research got published	10	7.5%	117	87%	5	4%	13	1.5%
Research training should be compulsory in the undergraduate curriculum	55	38%	32	22%	46	31%	12	9%
Research has future career options	61	42%	8	5.5%	52	36%	24	16.5%
Research is important for medical students to become better doctors	62	43%	11	8%	52	36%	20	13%
Feel motivated towards doing research	45	31%	18	12%	56	39%	26	18%
Research helps in promoting critical thinking	81	56%	4	3%	47	32%	13	9%
Feel stressed out with the task of research	51	35%	12	8%	49	34%	33	22%

fig. no. 6- distribution of participants as per their participation in any research project.(yes – 47%, no- 53%).



There is almost an equal distribution of respondents who participated and who did not.

fig. no. 7 – distribution of participants as per their research being published (if participated).

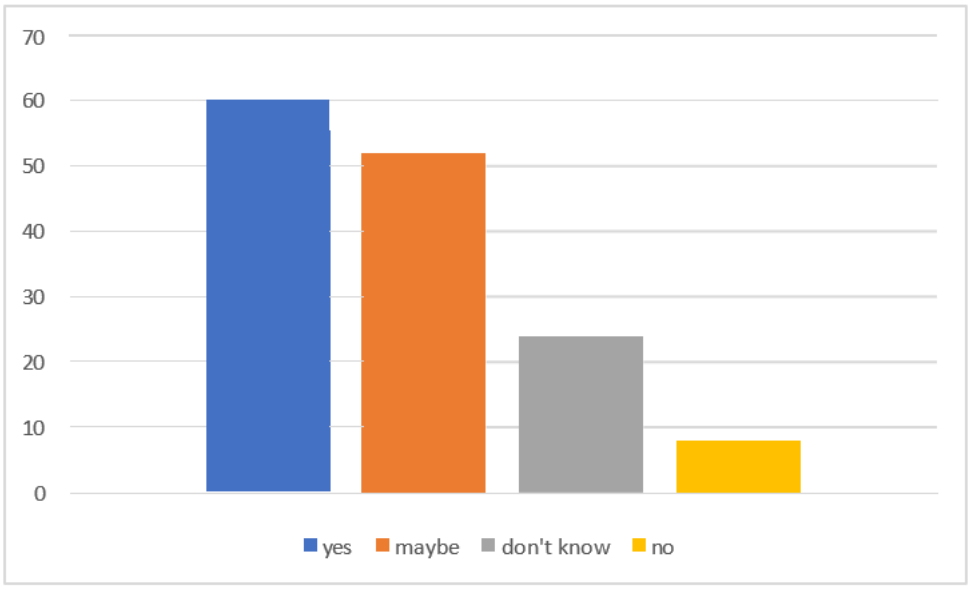


Majority did not publish their research, some were not aware of the publication, a few got published.

Table no. 4

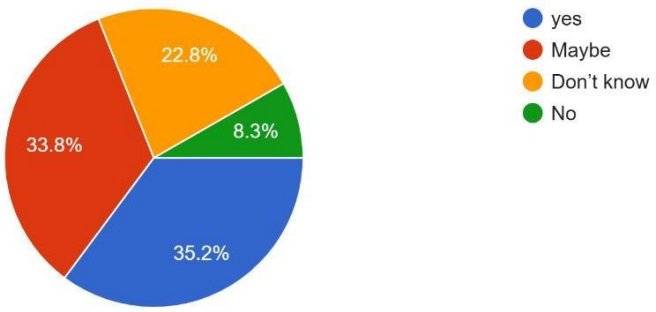
	yes	**maybe**	**Don't know**	**no**
Research has future career options	61	52	24	8

fig. no. 8 – distribution of participants as their view on research as a future career option.



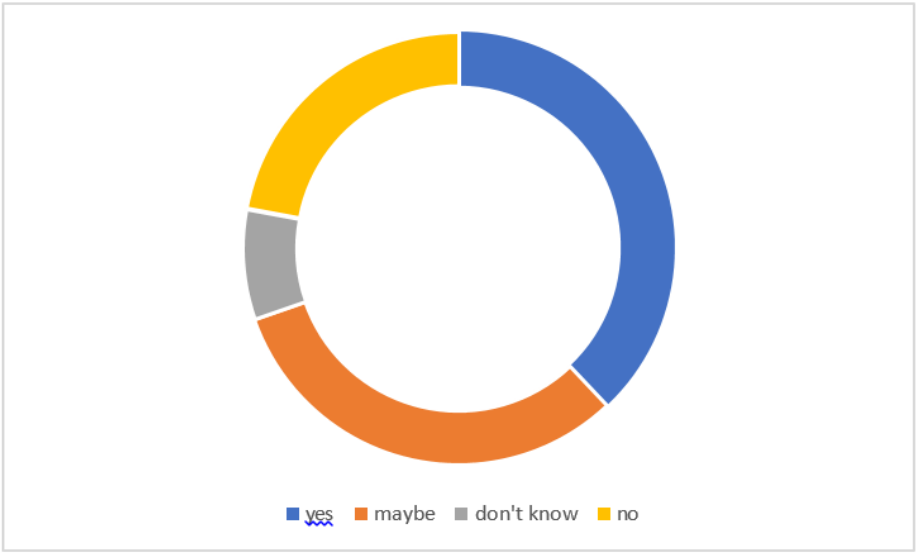
42% think that research has future career option

Fig. no.9- distribution of participants if they feel stressed out with the task of research.



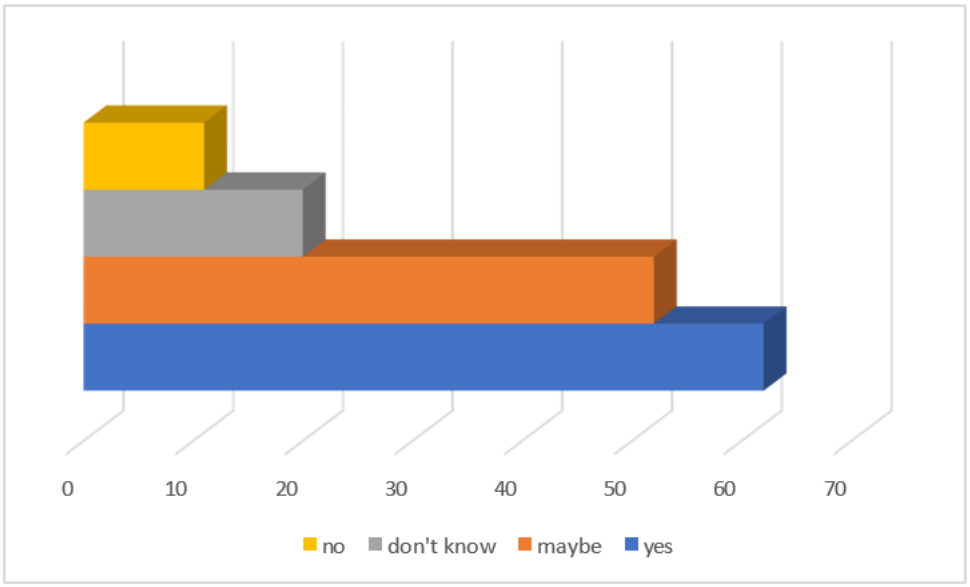
35% agree that they feel stressed out with the task of research and others(67%) who were never a part of any p research think that they will feel stressed out.

Figure no.-10 showing distribution of participants who think research training should be compulsory in curriculum (yes- 38%, maybe-32%, don't know-8%, no-22%)



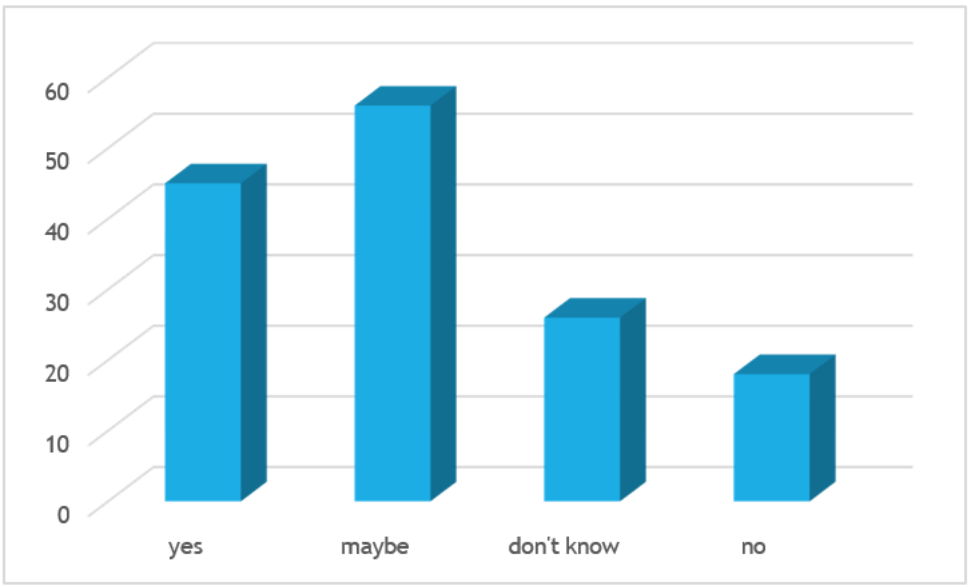
38%(55 students) agrees that research should be compulsory in their medical curriculum.

Fig no.-11 showing distribution of participants who think research is important for medical students to become better doctors



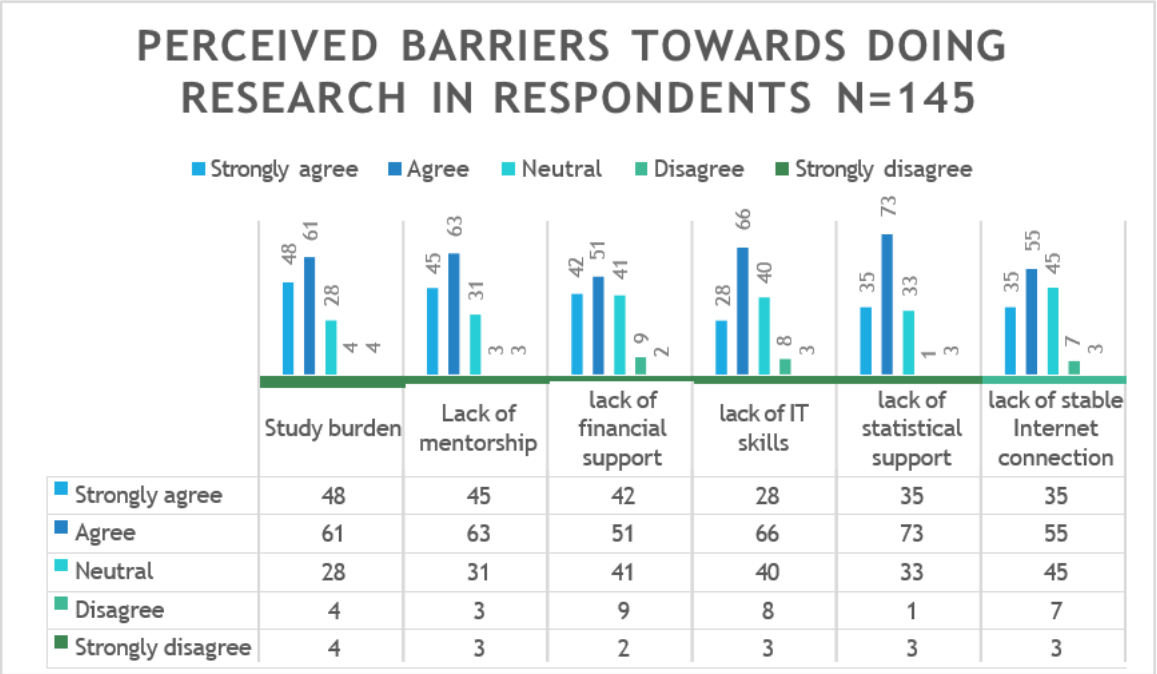
43% agree that research helps them to become better doctors.

Fig. no. 12 – distribution of participants who feel motivated towards doing research.



31% students feel motivated towards doing research.

fig.no. 13



	Study burden	Lack of mentorship	lack of financial support	lack of IT skills	lack of statistical support	lack of stable Internet connection
Strongly agree	48	45	42	28	35	35
Agree	61	63	51	66	73	55
Neutral	28	31	41	40	33	45
Disagree	4	3	9	8	1	7
Strongly disagree	4	3	2	3	3	3

DISCUSSION

The present study demonstrates that although awareness of research among MBBS undergraduates at GMC Srinagar is encouraging, substantial knowledge gaps remain. While 64.1% of participants correctly identified the first step in research as formulating a research question, only 42.8% recognized research as a key requirement for becoming better doctors. Moreover, nearly one-third (31%) reported lack of motivation, highlighting discrepancies between perceived importance and actual readiness to engage. These findings are consistent with studies conducted in Puducherry and Chennai, which reported positive attitudes but limited knowledge and skills among medical students [2,4].

Attitudes toward research in our cohort were mixed. Although 42.1% acknowledged future career opportunities in research, only 31% felt motivated to actively participate. This aligns with the Moroccan study by Chenfouh et al. (2024), where students expressed a positive outlook yet reported poor baseline knowledge [3]. Furthermore, stress associated with research (35.2%) was reported by a considerable proportion of students, mirroring findings from Sangli, where academic burden and lack of training emerged as major deterrents [1].

Barriers identified in this study, including study burden (75.2%), lack of mentorship (74.4%), and inadequate financial or statistical support (over 60%), closely resemble those highlighted in previous Indian and international studies [2,3,5]. Similar observations were reported from Lebanon, where absence of guidance was a major impediment, and from Central India, where inadequate facilities and time constraints limited participation [5]. Notably, poor internet connectivity (41.4%) emerged as a unique regional barrier in our setting, underlining the infrastructural challenges of Kashmir.

Overall, our findings underscore that positive attitudes do not always translate into active participation, as noted in several earlier studies [2,3]. Addressing these gaps requires structured educational interventions, mentorship programs, and integration of research training into undergraduate curricula. Evidence from other Indian medical colleges suggests that workshops, protected time, and recognition of student research can significantly enhance both competency and motivation [1,4].

Consistent with prior literature, this study highlights the need for targeted interventions to improve research knowledge and practice among undergraduates. Strategies such as incorporating research

methodology into the curriculum, facilitating mentorship networks, and strengthening infrastructure could help transform positive attitudes into meaningful research engagement.

CONCLUSION

The present study highlights a complex but important picture of undergraduate medical students' knowledge and attitudes towards research at Government Medical College, Srinagar. While the majority of students demonstrated a positive outlook towards the importance of research in clinical practice and acknowledged its role in fostering critical thinking and career advancement, significant gaps in knowledge and practical readiness were evident. Many participants lacked awareness of essential components such as research ethics, methodology, and the approval process, which are fundamental to conducting valid and ethical research. This discrepancy between positive attitudes and limited preparedness reflects the broader challenge faced by medical institutions in India and globally, where enthusiasm often does not translate into active participation due to systemic barriers.

Our findings reinforce the urgent need to bridge these gaps through structured interventions. More than half of the students reported feeling burdened by academic workload and expressed limited motivation, while lack of mentorship, inadequate financial support, insufficient statistical training, and poor internet access emerged as key obstacles. These barriers not only mirror those reported in national and international studies but also underscore unique infrastructural challenges faced in Kashmir, where unstable connectivity further restricts access to online databases and global literature. Addressing such issues is vital to create a supportive ecosystem where research can thrive.

The results of this study also suggest that early exposure to research, preferably from the first year of MBBS, could foster sustained interest and confidence. Workshops on research methodology, formal mentorship programs, and integration of compulsory research modules into the undergraduate curriculum are essential steps towards strengthening the foundation of evidence-based medicine. Recognition and incentivization of student-led research projects could further motivate students, while collaborations with faculty and interdepartmental initiatives may provide the guidance and infrastructure currently lacking.

Ultimately, cultivating a strong research culture at GMC Srinagar will not only benefit students in their academic and professional growth but also contribute meaningfully to addressing regional health challenges through context-specific evidence generation. By empowering undergraduates with the necessary knowledge, skills, and institutional support, the medical college can prepare a generation of clinician-scientists who actively participate in advancing public health and medical innovation. The findings of this study serve as both a reflection of existing gaps and a roadmap for future interventions aimed at transforming research attitudes into meaningful and sustainable practice.

SUMMARY

The majority of MBBS undergraduates at GMC Srinagar recognised the importance of research in medicine, with 55.9% agreeing that research promotes critical thinking and 42.8% believing it is essential for becoming better doctors. However, motivation towards research was relatively low, with only 31% reporting strong motivation, while 38.6% remained neutral.

Knowledge levels showed gaps: although 64.1% identified literature review as the first step in research, only 41.4% knew that the Institutional Ethics Committee approves medical research in India, and 60 students rated their understanding of research as only "average." About 53.1% correctly identified PubMed as a biomedical literature database.

Regarding attitudes, 42.1% agreed that research has future career options, and 37.9% supported making research training compulsory in the undergraduate curriculum. At the same time, 35.2%

reported feeling stressed by research tasks.
Barriers were strongly highlighted: 75.2% considered lack of awareness in basic research skills a significant hurdle, 75.1% identified study burden as a barrier, 74.4% cited lack of mentorship, 64.2% pointed to lack of financial support, and 74.4% noted inadequate statistical support. Limited internet connectivity was also reported as a constraint by most students.
Future career prospects in research were acknowledged by 42.1% of participants, though nearly half were unsure about pursuing it as a long-term path.
Only a minority (37.9%) supported making research training compulsory in the undergraduate curriculum, showing divided opinions on structured integration.
Barriers stood out prominently — lack of basic skills, mentorship, statistical support, and financial resources were cited by the majority as major challenges.

Poor internet connectivity and heavy study burden were also commonly reported, further restricting access to research opportunities.
Early participation in research was found to be limited, with only 15.1% of first-year students having any involvement, indicating a need for early exposure and encouragement.

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