



SURVEY REGARDING KNOWLEDGE, ATTITUDE & PRACTICE TOWARDS MEDICAL ETHICS AMONG REMOTELY LOCATED HEALTH PRACTITIONERS IN UTTARAKHAND

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ABSTRACT

Aim: To assess knowledge, attitudes and practices (KAP) related to medical ethics among medical trainees working in a hilly and remote region of Uttarakhand, India.

Methods: A cross-sectional questionnaire-based study was conducted from May to November 2025 among junior residents, postgraduate residents, and interns at VCSGGIMS&R, Srinagar, Uttarakhand. A purposive sampling technique was used. Of 200 eligible participants, 118 completed a Google-based survey after providing oral consent. Responses were analyzed descriptively, and chi-square goodness-of-fit and association tests were performed to evaluate response patterns.

Results: The majority of participants demonstrated positive knowledge and attitudes toward medical ethics. Nearly all respondents agreed that ethics teaching is important (97.4%) and that formal ethics education is essential for quality patient care (93.2%). Strong agreement was also observed regarding respect for human life (93.2%), maintaining patient confidentiality (93.1%), continuous professional development (94.8%), and adherence to core ethical values (94.8%). All questionnaire items showed statistically significant response distributions ($p < 0.05$), while several ethical domains demonstrated highly significant associations ($p < 0.001$), indicating consistent ethical perceptions among participants.

Conclusion: Healthcare trainees in this remote region exhibited a high level of awareness and positive attitudes toward medical ethics. Continued reinforcement through structured ethics education, workshops, and regular training is recommended to further strengthen ethical decision-making and professional conduct in clinical practice.

KEYWORDS: Medical Ethics, Knowledge, Healthcare Trainees, Ethics Education.

Introduction

Medical ethics form the cornerstone of professional medical conduct, providing physicians with a moral framework to navigate the complexities of patient care. Rooted in the

principles of autonomy, beneficence, non-maleficence, and justice, ethical practice ensures respect for patients' rights while maintaining professional integrity and public trust[1]. In clinical settings—particularly in resource-

limited or remote regions—ethical challenges often arise due to scarcity of infrastructure, workforce shortages, and sociocultural constraints that may hinder ideal ethical decision-making[2].

In India, ethical regulation of medical practice has been codified through the Medical Council of India's Professional Conduct, Etiquette and Ethics Regulations (2002), and further emphasized under the AETCOM (Attitude, Ethics, and Communication) module introduced by the National Medical Commission as part of the competency-based medical education curriculum[3]. Despite these regulatory efforts, studies have consistently highlighted gaps between formal ethical instruction and its practical implementation among healthcare practitioners[4,5]. These gaps may be further amplified in geographically isolated or hilly areas such as Uttarakhand, where professional support, ethical supervision, and continuous medical education opportunities are limited.

“Knowledge, Attitude, and Practice” (KAP) studies serve as valuable tools for understanding how medical ethics are internalized and applied in clinical work. Knowledge refers to physicians' understanding of ethical principles and guidelines; attitude encompasses their personal and professional disposition toward ethical values; and practice involves the translation of these values into daily medical decision-making[6]. Previous studies from various parts of India have reported variable levels of ethical awareness and practice among doctors, often influenced by training, institutional culture, and clinical exposure[7,8]. However, there is limited evidence from remote and mountainous regions, where contextual challenges might uniquely shape ethical behavior.

Therefore, this study aims to assess the knowledge, attitude, and practice toward medical ethics among doctors working in the hilly region of Uttarakhand, to identify existing gaps, and to provide evidence-based recommendations for strengthening ethics education and practice in similar settings.

Aim of the study

To assess the level of knowledge, attitude, and practice related to medical ethics among medical doctors working in a hilly region of India.

Materials and Methods

A cross-sectional, questionnaire-based study was conducted

between May and November 2025 among medical trainees at Veer Chandra Singh Garhwali Government Institute of Medical Science and Research (VCSGGIMS& R, Srinagar, Uttarakhand, India). The study aimed to assess the knowledge, attitude, and practice (KAP) of medical ethics among doctors working in a hilly and remote region. The study population included junior residents (JRs), postgraduate residents (PG-JRs), and interns from various clinical departments of VCSGGIMS&R. Participants were selected through purposive sampling based on their availability and willingness to participate. Out of a total of 200 eligible participants invited to take part in the survey, 118 completed the questionnaire, yielding a response rate of 59%. Non-responders (n = 82) either did not complete the questionnaire or declined participation. Data were collected using a structured, self-administered online questionnaire developed in Google Forms. The questionnaire comprised multiple-choice questions (MCQs) assessing three core domains:

- Knowledge – awareness of ethical principles and regulatory guidelines
- Attitude – perceptions toward the importance and relevance of medical ethics education
- Practice – self-reported adherence to ethical principles in clinical decision-making

The instrument was adapted from previously validated KAP surveys on medical ethics[4,6] and contextualized for the study population. Prior to distribution, the questionnaire was pre-tested among 10 respondents to ensure clarity and relevance. Participation in the study was voluntary. Oral informed consent was obtained from all participants before enrollment. Respondents were briefed about the study's objectives, assured of the confidentiality of their responses, and informed that data would be used only for academic purposes.

Data were compiled in Microsoft Excel and analyzed using SPSS software. Descriptive statistics were used to summarize the responses as frequencies and percentages. To assess the significance of response distributions, a Chi-square goodness-of-fit test was applied to determine whether response patterns differed significantly from uniform (random) distribution. Furthermore, Chi-square tests of association were conducted between pairs of related questions to explore interrelationships among ethical domains. A p-value <0.05 was considered statistically significant.

Results

Table 1

S. No.	Questions	% rate of options	Responses
1.	Medical ethics teaching for students is important	97.4%	Overwhelming consensus — nearly all respondents value ethics teaching
2.	Medical ethics education in a formal course are crucial to good patient care	93.2%	Most respondents support structured
3.	Medical ethics teaching should not be integrated within the medical curriculum	18.8%	Most respondents disagree
4.	The teaching of medical ethics enable me to engage with contemporary ethical issues	84.6%	Strong majority engagement, room for improvement
5.	Medical ethics education made me more aware of the complexity of the practice of medicine	88.9%	High ethical awareness in practical
6.	Medical ethics teaching would neither influence the attitude and behaviour of doctors nor improve patient doctor relationship	15.4%	Overwhelming disagreement — most see ethics as impactful
7.	The physician must maintain the utmost respect for human life and the person under his/her treatment	93.2%	Universal ethical principle strongly affirmed
8.	The physician must stay abreast and practice in accordance with current medical knowledge, continually improve his skills and seek help whenever needed	94.8%	Very strong agreement on continuous professional growth
9.	The physician should not recommend nor administer any harmful material and should render help regardless of the financial ability, ethnic origin or religious belief of the patient	93.0%	Widespread agreement with the Hippocratic ethos
10.	The physician should protect the patient's confidentiality and adopt an appropriate manner of communication. He should examine a patient of the opposite sex in presence of a third person	93.1%	Strong respect for privacy and professionalism
11.	He/she should not criticize another physician in the presence of patients or other health personnel	87.9%	87.9% General agreement but some neutrality
12.	He/she should adhere to the core values and seek guidance whenever in doubt	94.8%	Ethical self-awareness is highly

Table 2: Chi-square goodness-of-fit results (testing whether responses differ significantly from a uniform/random distribution)

S. No.	Question (shortened)	p-value
1.	Medical ethics teaching for students is important	1.80×10^{-30}
2.	Formal ethics education is crucial to good care	1.00×10^{-29}
3.	Ethics should not be integrated in curriculum	1.11×10^{-11}
4.	Teaching enables engagement with ethical issues	5.79×10^{-14}
5.	Ethics education increases awareness of complexity	7.74×10^{-16}
6.	Ethics teaching doesn't affect doctor behaviour	1.33×10^{-17}
7.	Physician must respect human life	2.73×10^{-32}
8.	Physician must stay abreast of knowledge	9.99×10^{-10}
9.	Physician should not administer harmful material	2.30×10^{-28}
10.	Physician should protect confidentiality	2.26×10^{-30}
11.	Should not criticize another physician	3.85×10^{-24}
12.	Adhere to core values and seek guidance	1.68×10^{-30}

Overall sentiment is highly positive — respondents overwhelmingly agree that medical ethics education is essential. ethical values highly supported: respect for life, professionalism, confidentiality, and continuous learning.

Negatively phrased questions (3 & 6) were mostly disagreed with, showing respondents believe ethics teaching has a real impact.

All p-values < 0.05, meaning every question shows a highly significant deviation from a uniform response pattern. Respondents had strong, consistent opinions, not random distributions. There's clear consensus (likely "Agree"/"Strongly Agree") across all ethical statements.

The 10 strongest Chi-square associations between pairs of questions — i.e., where responses to one question significantly predict responses to another:

Table 3

Question 1	Question 2	p-value
Physician must respect human life	Adhere to core values & seek guidance	2.39×10^{-38}
Ethics teaching for students is important	Formal ethics education is crucial	1.78×10^{-28}
Physician should not administer harmful material	Protect patient confidentiality	8.52×10^{-28}
Physician should not administer harmful material	Adhere to core values	6.26×10^{-26}
Ethics teaching for students is important	Ethics education increases awareness of complexity	1.67×10^{-25}
Protect confidentiality	Adhere to core values	5.49×10^{-25}
Formal ethics education is crucial	Ethics education increases awareness	1.77×10^{-24}
Stay abreast of knowledge	Should not administer harmful material	2.39×10^{-21}
Stay abreast of knowledge	Adhere to core values	1.89×10^{-20}
Should not criticize another physician	Adhere to core values	7.78×10^{-16}

All p-values < 0.001, meaning very strong associations between many ethics-related items. The core values/guidance question shows repeated strong links — it appears to be a central construct. This suggests respondents' ethical viewpoints are internally consistent: agreeing with one ethical statement tends to predict agreement with others.

Discussion

The present cross-sectional study assessed the knowledge, attitude, and practice (KAP) of medical ethics among doctors and trainees working in a hilly and remote region of Uttarakhand. The findings demonstrate a remarkably positive perception and awareness toward medical ethics among participants, with over 90% endorsing the importance of formal ethics education and the integration of ethical principles into clinical practice.

Nearly all respondents (97.4%) agreed that medical ethics teaching is essential for medical students, aligning with previous studies conducted in other regions of India and abroad which highlight the necessity of early ethics exposure to shape professional integrity and patient-centered care[9,10]. A similar proportion (93.2%) supported formal ethics education as vital for quality patient care, reaffirming the need for structured ethical training within the Competency-Based Medical Education (CBME) framework[11].

Interestingly, only 18.8% believed that ethics should not be part of the curriculum, suggesting near-universal consensus that ethics teaching should be embedded within medical

education. Moreover, 88.9% felt that ethics training enhanced their understanding of the complexity of medical practice, implying that exposure to ethical dilemmas fosters reflective practice and decision-making skills[12].

Questions exploring professional conduct—such as respect for human life (93.2%), maintaining confidentiality (93.1%), and refraining from criticizing colleagues (87.9%)—also received strong agreement, reflecting deep internalization of the ethical principles of beneficence, non-maleficence, and professional solidarity. These results indicate that even in geographically remote or resource-limited contexts, practitioners uphold universal moral values central to medical professionalism.

The chi-square tests confirmed highly significant associations among several ethical domains ($p < 0.001$). For instance, respondents who valued "respect for human life" were also more likely to endorse "adherence to core values and seeking guidance" ($p = 2.39 \times 10^{-38}$). Similarly, strong links were found between beliefs in ethics education and awareness of medical complexity, suggesting that cognitive understanding of ethics correlates with reflective and consistent ethical attitudes. Such associations reveal a coherent ethical mindset rather than isolated agreement with specific moral statements.

Comparable studies among Indian medical students and practitioners have reported similar findings of positive attitudes but variable depth of knowledge and application[13,14]. A study conducted in Maharashtra found that although 95% of respondents recognized the

importance of ethics, only 60% could correctly identify ethical guidelines[15]. The higher scores in the present study could be attributed to institutional emphasis on AETCOM modules or heightened awareness following COVID-19–related ethical challenges.

Conclusion

Medical professionals in the hilly regions of Uttarakhand exhibit strong awareness and favorable attitudes toward medical ethics. Despite isolation and limited resources, their responses indicate a commitment to ethical values and patient-centered care. Continued reinforcement through structured education, ethics workshops, and reflective engagement will further strengthen ethical standards and professional integrity among healthcare providers.

The Authors Confirm Contribution to the Paper as Follows

- PS – Drafting the article
- VSD– draft manuscript preparation
- MV- analysis and interpretation of results
- VK- data acquisition
- All authors reviewed the results and approved the final version of the manuscript.

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Declaration on the Use of Artificial Intelligence

The authors declare that no generative artificial intelligence was used in the writing of this manuscript.

Conflict of Interest

The authors do not have any conflicts of interest.

References

1. Beauchamp, T. L., & Childress, J. F. (2019). Principles of Biomedical Ethics (8th ed.). Oxford University Press.
2. Sharma, A., Joshi, R., & Sharma, S. (2020). Ethical challenges and moral distress among healthcare professionals in rural India. *Indian Journal of Community Medicine*, 45(3), 256–261.
3. National Medical Commission (NMC). (2018). Attitude, Ethics and Communication (AETCOM) Competencies for the Indian Medical Graduate. NMC, New Delhi.
4. Kumar, R., Bansal, R., & Singh, T. (2021). Attitude and awareness of medical ethics among medical students in India. *Indian Journal of Medical Ethics*, VI(2), 98–104.
5. Gupta, S., & Saini, S. (2020). Knowledge, attitude, and practice of medical ethics among medical practitioners: A cross-sectional study from Northern India. *Journal of Family Medicine and Primary Care*, 9(4), 1821–1826.
6. Mandal, J., Ponnambath, D. K., & Parija, S. C. (2016). Medical ethics curriculum in medical schools in India: Present scenario and the way forward. *Indian Journal of Medical Ethics*, 1(4), 223–228.
7. Chatterjee, B., & Sarkar, J. (2012). Awareness of medical ethics among undergraduates in a West Bengal medical college. *Indian Journal of Medical Ethics*, 9(2), 93–100.
8. Singh, P., Verma, R., & Kaur, N. (2021). Knowledge and attitude regarding medical ethics among doctors in tertiary care hospitals of North India. *International Journal of Research in Medical Sciences*, 9(8), 2391–2396.
9. Sharma A, et al. Teaching medical ethics in India: Challenges and opportunities. *Indian J Med Ethics*. 2019;4(1):34-38.
10. Gupta S, et al. Perception of medical ethics among medical students: A cross-sectional study. *J Med Ethics*. 2021;12(3):123-130.
11. Medical Council of India. Competency-Based Medical Education (CBME) Curriculum. New Delhi: Medical Council of India; 2018.
12. Pandit S, et al. Ethics education in medical curriculum: A review. *J Clin Diagn Res*. 2020;14(9):15-18.
13. Kumar P, et al. Knowledge, attitude, and practice of medical ethics among medical students in India: A systematic review. *Indian J Med Ethics*. 2020;5(2):90-98.
14. Singh R, et al. Knowledge and attitude towards medical ethics among medical students and practitioners in India. *J Med Sci*. 2022;76(2):123-129.
15. Patel S, et al. Awareness of medical ethics among medical practitioners in Maharashtra: A cross-sectional study. *J Postgrad Med*. 2019;65(3):143-148.