

Assessment of Ethical Awareness and Practices in Healthcare among Dental Students

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ABSTRACT

Background: Ethical awareness is an essential component of healthcare education, ensuring patient trust, autonomy, and professional accountability. Dental students, as future practitioners, must be equipped with ethical knowledge and practices to handle clinical dilemmas effectively.

Objective: This study aimed to assess the ethical awareness, attitudes, and practices of dental students with respect to healthcare ethics.

Methods: A cross-sectional, questionnaire-based survey was conducted among dental students. The tool assessed knowledge of ethical principles, attitudes toward patient autonomy and consent, and practices related to error disclosure and clinical decision-making.

Results: The findings indicated that while most students were aware of the Hippocratic Oath, knowledge of international ethical guidelines was limited. A majority lacked formal bioethics training, and gaps were noted in informed consent practices and awareness of ethics committees.

Conclusion: Dental students demonstrated deficiencies in ethical knowledge and practices, highlighting the urgent need for structured bioethics education and training to promote patient-centred care.

Keywords: Healthcare ethics, Dental students, Bioethics, Ethical awareness, Informed consent.

INTRODUCTION

Ethics—often described as moral philosophy—is the discipline concerned with discerning what is right and wrong, and what constitutes good or bad human conduct. The term originates from the Greek word *ethos*, meaning character or behaviour, emphasizing the internal compass that governs actions based on values rather than imposed regulations. In healthcare, ethics plays a particularly critical role due to the intimate and impactful nature of clinician–patient interactions. Medical ethics, or bioethics, encompasses foundational principles such as autonomy, beneficence, non-maleficence, and justice, along with the increasingly emphasized values of veracity and confidentiality. These principles aim to guide healthcare professionals in navigating complex moral situations, balancing scientific advancement with humanistic care.^{3, b} In the Indian healthcare landscape, ethical dilemmas have become more pronounced due to several converging factors: heightened awareness of patient rights, advancements in biomedical technology, increased media scrutiny, and rising medico-legal cases. However, despite these growing challenges, the current medical and dental curricula in India still do not provide adequate training in ethics.² Ethics education is often embedded superficially within forensic medicine or introduced as fragmented sessions, lacking depth, standardization, and formal evaluation mechanisms. According to Janakiram & Gardens (2014), most medical and dental postgraduates in South India reported having little to no structured training in healthcare ethics. Instead, their ethical understanding was primarily acquired through informal sources such as internet reading, news reports, and on-the-job experiences.¹

The absence of systematic ethics education during postgraduate training leaves students underprepared to manage the

real-life ethical challenges they encounter in clinical practice. The study by Janakiram and Gardens also noted that dental postgraduates demonstrated lower levels of ethical knowledge and awareness compared to their medical counterparts, possibly due to the limited patient interactions or less emphasis on ethics in dental curricula.¹

Complementing this, recent research explored the role of empathy in resolving ethical dilemmas among dental house surgeons in Telangana. Their findings revealed that while participants generally showed moderate to high levels of empathy, there was little to no statistically significant association between empathy and ethical decision-making—except in the case of truthfulness, where higher empathy correlated with greater honesty toward patients.⁴ This indicates that while empathy is essential for effective patient communication and trust-building, it may not independently guide ethical reasoning unless supported by formal ethical education and reflective practice.

Ethical challenges encountered by students include respecting patient autonomy, maintaining confidentiality, addressing professional misconduct, and navigating conflicts between clinical judgment and patient preferences. These dilemmas are often heightened during internships and postgraduate years, when students transition from guided learning to greater clinical responsibility. Without a solid ethical foundation, students may resort to hierarchical or ad hoc decision-making, relying on supervisors or institutional norms that may not always align with best ethical practices.⁶

In light of these insights, the present study seeks to address critical gaps in ethical education and practice among healthcare students. By evaluating their current levels of ethical knowledge, attitudes, and empathy, this manuscript aims to inform the development of a more robust, context-sensitive, and interdisciplinary bioethics curriculum. Such efforts are crucial to ensuring that future healthcare professionals are not only clinically competent but also ethically grounded, empathetic, and culturally aware in their decision-making processes.

MATERIALS AND METHODS

Study Design and Setting

This research employed a cross-sectional descriptive approach to assess the level of ethical awareness and practice conduct among dental students. It was conducted over a period of three months at the School of Dental Sciences, Krishna Vishwa Vidyapeeth.

The participants included undergraduate students from the third year, final year, and internship phase of the Bachelor of Dental Surgery (BDS) program. These groups were specifically chosen as they are actively involved in clinical training and are more likely to encounter ethical situations in their day-to-day learning and practice. Prior to commencing the study, approval from the Institutional Ethics Review Board of KVV was secured. The sample size was calculated using standard statistical methods, and students were selected through a simple random sampling technique to ensure an unbiased representation. All participants were between the ages of 18 and 30 years, and students of all genders, religions, castes, and socioeconomic backgrounds were considered eligible, provided they were currently undergoing clinical training. Students from preclinical years and those who did not wish to participate were excluded from the study. After obtaining informed consent, data collection was carried out using a structured, self-administered questionnaire. The questionnaire consisted of 10 closed-ended questions designed to assess the students' knowledge, attitudes, and self-reported practices regarding healthcare ethics.

Sample size

As per reference studies, it was found that 70% of students were aware about the ethical issues.

$n = z^2 p q / L^2$ Where:

n = sample size = 84 (rounded from 84.90)

P = Population proportion (those who were aware about as per reference) = 70%

$Q = 100 - P = 100 - 70 = 30$

L = Margin of error = 10%

$Z = 1.96$ (Z value for 95% confidence level; $1.96^2 \approx 3.84$)

The study targeted undergraduate dental students enrolled from the 3rd year through the final year.

Sample size: 100 **Criteria** Inclusion Criteria:

1. Students who are doing clinical procedures
2. Willingness to participate voluntarily.

Exclusion Criteria:

1. Students who are not doing clinical procedures.
2. Post graduates students.

Ethical approval for study:

The Institutional Ethics Committee has given permission to initiate the research (Protocol Number 075/2025-2026) titled, Assessment of Ethical Awareness and Practices in Healthcare Among Dental Students in Western Maharashtra.

Data collection:

The survey will be made available in digital formats (Google Forms) to maximize accessibility among the colleges involved. Prior to distribution, a brief overview of the study's aims will be provided.

DATA COLLECTION METHODS

Participants and survey instrument an online cross sectional survey was created and distributed via the universal questionnaire designer platform to access dental students utilization Evaluation of Ethical Understanding and Conduct in Healthcare Among Dental Students . Final year undergraduates, third year undergraduates & Interns actively involving clinical training were the target participants, while faculty members, post graduates, preclinical students were not included. Prior to participating, all respondents gave their electronics informed consent, completing all sections was mandatory for submission.

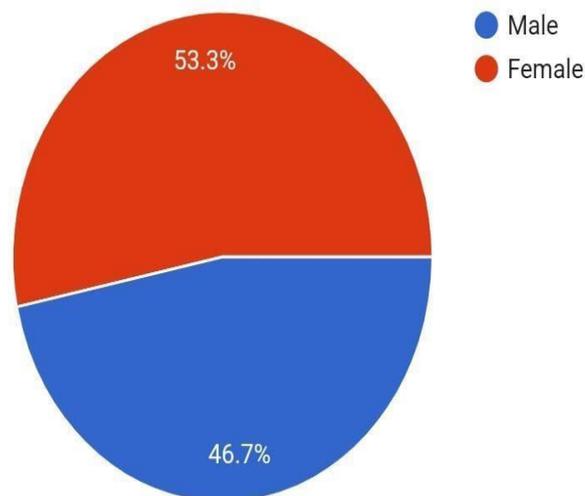
Statistical Methodology:

Data will be gathered through Microsoft Excel and analysed using SPSS software (version XX, IBM Corp., Armonk, NY, USA). Summary statistics, such as frequency, percentage, mean, and standard deviation, will be used to characterise participant demographics and overall response patterns. The Chi-square test will be employed to examine relationships between categorical variables, while mean score comparisons between two groups will utilise the independent t-test, and comparisons involving more than two groups will be conducted using one-way ANOVA with Tukey's post-hoc analysis. To investigate associations between continuous variables, Pearson's correlation will be applied, and the reliability of the questionnaire will be assessed using Cronbach's alpha, with values of 0.7 or higher indicating acceptable internal consistency. A significance level of $p < 0.05$ will be established for all statistical analyses.

RESULTS

Gender

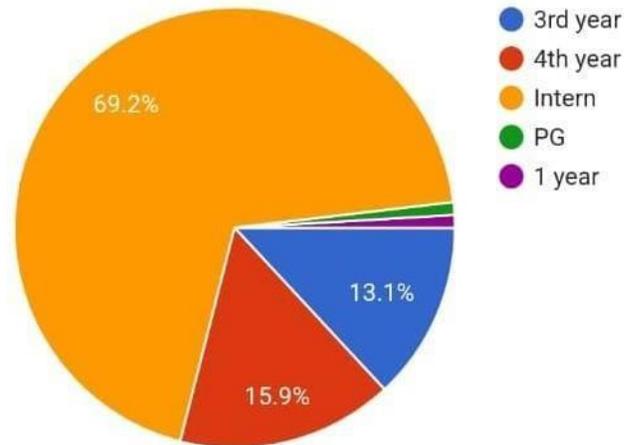
107 responses



The pie chart illustrates the gender distribution of the study participants. **Females comprised 53.3%** of the total sample, while **males accounted for 46.7%**, indicating a slightly higher representation of female dental students in the study.

Designation

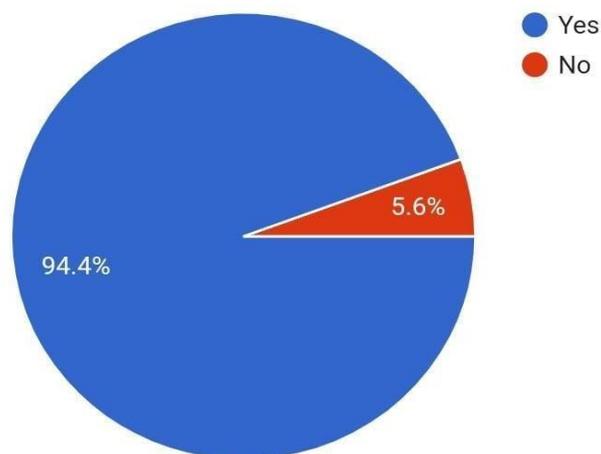
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The pie chart represents the academic year distribution of the study participants. **Interns made up the largest group at 69.2%**, followed by **4th-year students at 15.9%**, and **3rd-year students at 13.1%**.

1. Are the participants aware of the core principles of the Hippocratic Oath?

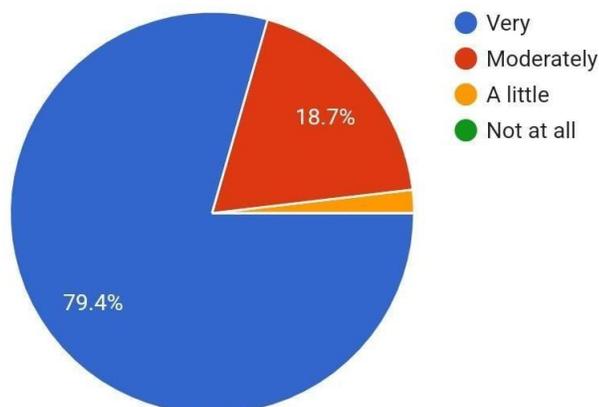
107 responses



The pie chart shows participants' awareness of the core principles of the **Hippocratic Oath**. Out of 107 responses, **94.4% reported being aware**, while only **5.6% were not**. This indicates a strong level of ethical awareness among the majority of respondents.

2. To what extent do you consider ethical understanding essential in your profession?

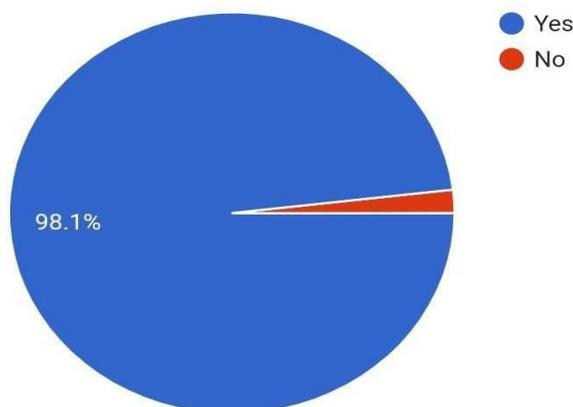
107 responses



The pie chart illustrates participants' views on the importance of ethical understanding in their profession. A significant majority (**79.4%**) considered it **very essential**, while **18.7%** viewed it as **moderately important**. Only a small fraction felt it was **just a little** important or **not at all**.

3. Do you respond to patient's questions during their appointments?

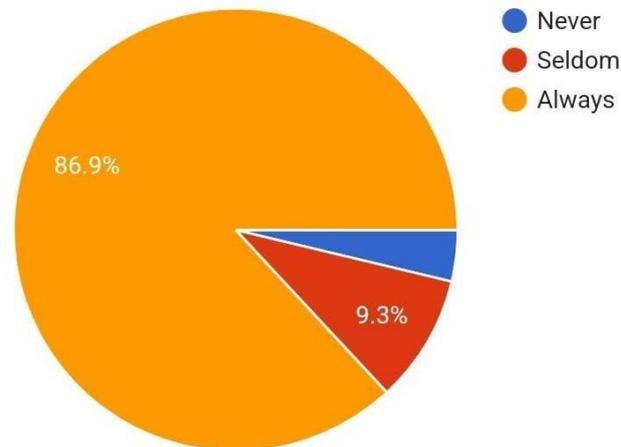
107 responses



The pie chart shows participants' responses to whether they address patients' questions during appointments. A vast majority, **98.1%**, answered "Yes", indicating strong communication and patient engagement. Only **1.9%** reported that they do not respond to patients' questions, suggesting minimal gaps in patient interaction.

4. How frequently do you do patient's inquire about their diagnosis?

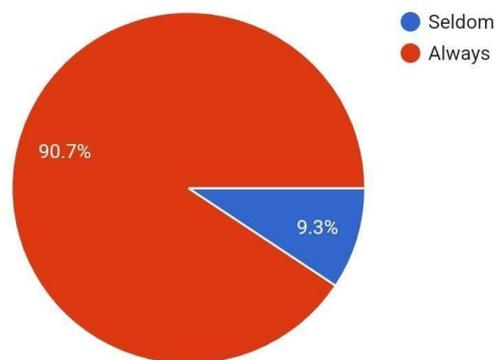
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The pie chart illustrates how often dental students report that patients inquire about their diagnosis. A large majority, **86.9%**, stated that patients **always** ask about their diagnosis, while **9.3%** said it happens **seldom**, and a small portion (**3.7%**) reported that patients **never** inquire. This reflects a high level of patient engagement and curiosity regarding their health.

5. How frequently do you talk about your daily cases with your colleagues?

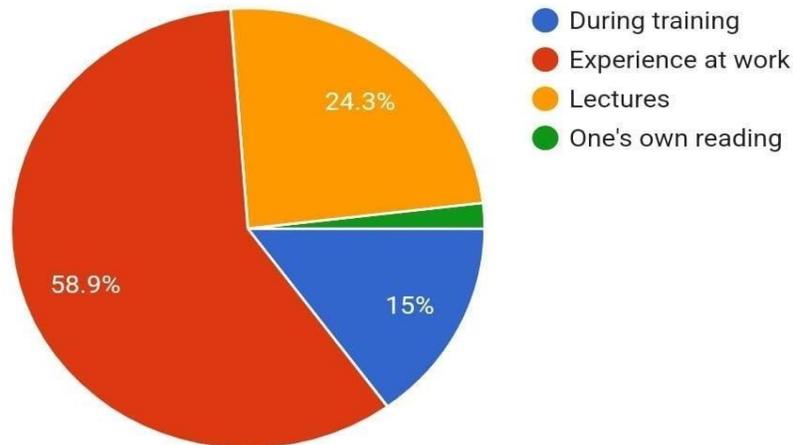
107 responses



The pie chart depicts how frequently participants discuss their daily clinical cases with colleagues. A significant majority, **90.7%**, reported that they **always** engage in such discussions, while only **9.3%** indicated that they **seldom** do. This highlights strong peer-to-peer communication and collaboration among dental students.

6. What was your learning path for bioethics?

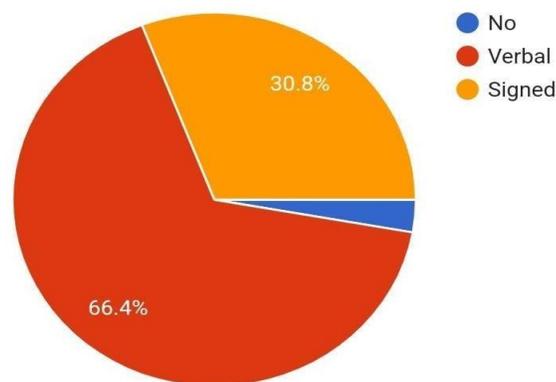
107 responses



The pie chart illustrates the sources through which participants learned about bioethics. A majority, **58.9%**, reported gaining knowledge through **experience at work**, followed by **24.3%** through **lectures**, and **15%** during **training**. A small percentage learned through **self-reading**, indicating varied but primarily practical learning pathways.

7. Have you explained procedure to patient's and received their informed consent?

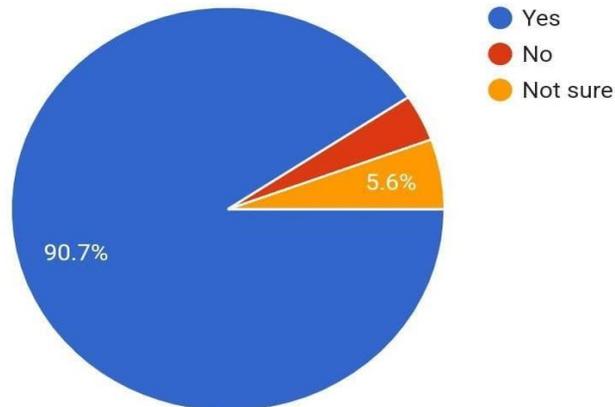
107 responses



The pie chart displays responses regarding the practice of obtaining informed consent from patients. A majority of participants (**66.4%**) reported giving **verbal** explanations and obtaining verbal consent, while **30.8%** obtained **signed consent**. Only a small fraction (**2.8%**) admitted to **not** explaining procedures or seeking consent, highlighting a generally strong adherence to ethical communication standards.

8. Does your institution have an ethics committee?

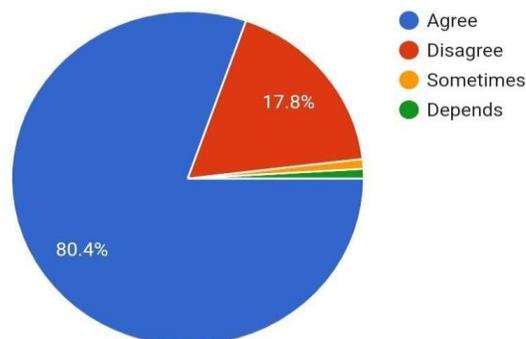
107 responses



This pie chart illustrates participants' awareness of the presence of an ethics committee in their institution. A significant majority (**90.7%**) confirmed that their institution has an ethics committee, while **5.6%** were unsure and **3.7%** stated that their institution does not have one. This reflects a generally high level of institutional support for ethical oversight.

9. How strongly do you agree or disagree with the following statement." Patient should always be informed of wrong doing"

107 responses



This pie chart shows that a large majority (**80.4%**) of respondents agree that patients should always be informed of any wrongdoing. **17.8%** disagree with the statement, while a small fraction believe it either depends or is only necessary sometimes. This reflects a strong ethical commitment to transparency in patient care.

The research indicated that a significant number of dental students showed a solid awareness of ethical principles, as 94.4% were acquainted with the fundamental concepts of the Hippocratic Oath and 79.4% regarded ethical comprehension

as highly important to their profession. Interactions with patients were routinely practiced, with 98.1% of participants stating they addressed patients' questions during appointments, and 86.9% indicating that patients consistently ask about their diagnosis. Discussion of clinical cases among peers was prevalent, with 90.7% regularly collaborating with colleagues, which suggests a cooperative approach to ethical decision-making.

Regarding practical ethical behaviour, a large portion of students (66.4%) obtained verbal informed consent, while 30.8% acquired signed consent, indicating conformity to ethical standards of patient communication. Knowledge of bioethics was primarily acquired through practical experience at work (58.9%), supplemented by lectures and formal education. The majority of institutions (90.7%) reportedly maintain an ethics committee, offering an added layer of ethical oversight. Moreover, 80.4% of students concurred that patients should always be informed in cases of any misconduct, reflecting a strong ethical dedication to transparency and patient rights within the community of dental students.

DISCUSSION

The assessment of ethical comprehension among dental students reveals significant gaps that could affect their professional behaviour. In comparison to medical postgraduates, dental students face ethical dilemmas less often, which may account for their limited interaction with ethical matters. Their education primarily focuses on technical and clinical abilities, frequently at the cost of broader ethical themes like patient rights, cultural sensitivity, and research integrity. This disparity highlights the necessity of incorporating structured bioethics education into dental training to ensure that students are sufficiently equipped to manage complex professional challenges.^{1,2}

The research also points out a lack of familiarity among dental students regarding international ethical standards, such as the Nuremberg Code and the Helsinki Declaration, despite a general awareness of the Hippocratic Oath.³ With 68% of participants indicating no formal bioethics education, most of their knowledge was obtained informally from sources such as newspapers and the internet.¹ This piecemeal exposure leaves students poorly prepared to tackle intricate ethical dilemmas in their practice. A systematic curriculum that presents ethical frameworks, paired with chances for practical learning through case discussions, would enhance their readiness.^{2,4}

Attitudinal differences further indicate a necessity for reform. An impressive 80.3% of dental students felt that doctors are always right, regardless of patients' perspectives, illustrating a lingering paternalistic attitude towards care.¹ This is in contrast to the more patient-centred perspective among medical postgraduates, who are more inclined to honour autonomy and advocate for informed consent. Respect for autonomy and transparency are central to international ethical guidelines, including those of the World Medical Association and the

Indian Council of Medical Research.³ b The hesitation among dental students to reveal treatment mistakes or seek consent for diagnostic tests reveals shortcomings in ethical awareness and accountability, which are essential for establishing trust within the dentist– patient relationship.²

Lastly, the tendency to consult supervisors and department heads instead of ethics committees when confronted with dilemmas highlights both a lack of understanding of available institutional resources and the limited role of ethics committees in clinical decision-making.¹ Most ethics committees in India concentrate on research review rather than clinical advice, leaving students without structured options for ethical guidance.^{b.6} Enhancing the visibility and roles of ethics committees, along with integrating a formal bioethics module into the dental curriculum complete with assessment elements, would promote a culture of ethical responsibility. This would help guarantee that future dental professionals maintain the highest standards of ethical conduct in patient care.²

CONCLUSION

The assessment of ethical comprehension and behavior among dental students reveals significant gaps in their knowledge, attitudes, and practices concerning healthcare ethics. In contrast to medical students, dental students face ethical challenges less often, have a limited understanding of global ethical standards, and frequently exhibit paternalistic attitudes that compromise patient autonomy. These deficiencies highlight the inadequacies in the existing dental curriculum, where ethics is addressed only at a superficial level and seldom assessed. To guarantee that upcoming dental practitioners maintain integrity, accountability, and a focus on patient care, it is crucial to incorporate a structured bioethics curriculum within dental education. This training should prioritize informed consent, transparency, patient rights, and cultural awareness, while also encouraging reliance on institutional ethics committees for support. By integrating ethical principles into theoretical education and clinical experiences, dental programs can more effectively prepare students to address the intricate issues of contemporary healthcare and uphold the highest standards of professional ethics.

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Author Contributions:

Maithilee Mohan Mane was in-charge for the overall conception and design of the study. They created the questionnaire, performed the literature analysis, and collected data. They also performed the data analysis and interpretation, and led the writing of the manuscript, including the discussion and conclusion sections.

Dr. Ajay Gaikwad who provided academic guidance throughout the research process. They contributed to refining the study design, supported ethical approvals, and provided critical feedback on the analysis and final draft of the paper.

Disclosure:

The author declares no conflicts of interest related to the content, authorship, or publication of this research.

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