

Knowledge, Attitude, Practice Of Ethics Among Students Of Dental Institution In Bangalore City. A Questionnaire-Based Study.

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Abstract:

Background: Ethical practices in dentistry are essential to ensure quality care, patient trust, and professionalism. As future healthcare providers, dental students must be equipped with sound ethical knowledge, a positive attitude toward ethics, and the ability to apply ethical principles in clinical settings. Despite the importance of ethical education, traditional dental training often lacks sufficient emphasis on ethics. This study aims to evaluate the knowledge, attitude, and practice (KAP) of bioethics among clinical dental students in Bangalore, considering the influence of gender and year of study.

Materials and Methods A cross-sectional questionnaire-based study was conducted among 782 clinical dental students from a dental institution in Bangalore. After excluding 31 incomplete responses, data from 751 students (543 females, 208 males) were analyzed, yielding a response rate of 97.1%. The questionnaire assessed three domains: knowledge, attitude, and practice of bioethics. Statistical comparisons were made based on gender and year of study using appropriate methods. Data were represented in tables and graphs for clarity.

Results: 72.30% females (n=543), 27.70% males (n=208). Ranged from 13.58% (1st year BDS) to 18.91% (interns), with postgraduates comprising 17.18%. Males scored slightly higher (4.45 ± 0.92) than females (4.38 ± 0.77); postgraduates had the highest mean score (4.44 ± 0.72). Differences were not statistically significant. Females and postgraduates showed a more positive attitude toward ethical practices; results were not statistically significant. Higher practice scores were observed among females and postgraduates compared to other groups; differences were not statistically significant.

Conclusion: The study indicates moderate to good knowledge, attitude, and practice regarding bioethics among clinical dental students, with slight variations based on gender and academic level. Although not statistically significant, postgraduates and females tended to demonstrate better ethical awareness and behavior. These findings underscore the importance of strengthening ethical education in dental curricula and tailoring it to cultural and academic contexts

Key Word: Bioethics, Dental students, Knowledge-attitude-practice, Ethics in dentistry, Bangalore.

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I. Introduction

Ethical practices are vital in dentistry to ensure patient trust, quality care, and professional integrity. As future healthcare providers, dental students must possess strong ethical knowledge, attitudes, and practices (KAP) to handle clinical dilemmas effectively. Traditional dental education often lacks emphasis on ethics, making it essential for institutions to integrate structured ethical training into their curricula.

Bangalore, a hub for dental education in India, presents a unique opportunity to assess how well students are prepared for ethical challenges. This study aims to evaluate the KAP of ethics among clinical dental students in Bangalore, helping identify gaps in current training and guide improvements in ethical education tailored to local cultural and professional needs.

II. Material And Methods

A cross-sectional questionnaire-based study was conducted in January 2025 among undergraduate and postgraduate dental students of a dental institution in Bangalore. Ethical approval was obtained from the Institutional Ethical Committee, and informed consent was collected from all participants.

Study Design

The study is a cross-sectional questionnaire-based study conducted in the month of January 2025, on dental students of a dental care institution in Bangalore.

Study Population

The study population consists of dental students (both undergraduates and postgraduates) studying in a dental care institution in Bangalore state.

Ethical Clearance And Consent:

Ethical clearance was obtained from the Ethical Committee of Rajarajeswari Dental College and Hospital. After explaining about the study, informed consent was taken from the study participants.

Inclusion And Exclusion Criteria:

Dental students (1st, 2nd, 3rd, 4th BDS, Interns and Post graduates) who were present on the day of the study and those who were willing to participate in the study were included in the study. All the 1st BDS and 2nd BDS students and the clinical dental students who were absent on the day of study and not willing to participate in the study were excluded.

Study Instrument

The questionnaire was divided into 2 parts. The first part of the questionnaire consists of 4 items pertaining to demographic data which includes age, gender, course and year of study. The second part of the questionnaire consisted of 20 closed ended questions on various aspects of bioethics such as knowledge, attitude and practice of bioethics. The questions are of dichotomous type consisting either yes or no, score 1 was given for positive answers and score 0 was given for negative replies.

Pilot Study

A pilot study was conducted on a sample of 30 and the validity and reliability of the questionnaire was checked (cronbach's alpha=0.8)

Collection Of Data And Statistical Analysis

The pretested questionnaire was administered to the target population in the month of January 2025 and the data was collected from 782 subjects. The data was analyzed using (SPSS) version 18.0. Comparison of knowledge, attitude and practice scores was done between males and females using Chi-square test and comparison in between groups based on year of Study was done using ANOVA. p value of <0.05 was considered to be statistically significant.

III. Result

A total of 782 students were included in the study and were given questionnaires. Out of 782, 31 were excluded from the study for submitting incomplete questionnaire yielding the response rate be 97.1%. Out of 751, 543 (72.30%) were female and 208 (27.70%) were males. Table 1 and Graph 1 shows the distribution of participants according to gender and year of study in which are 13.58% (n=102) Of 1st BDS students, 15.45% (n=116) Of 2nd BDS students, 16.38% (n=123) Of 3rd BDS students, 18.51% (n=139) Of 4th BDS students, 18.91% (n=142) of interns, 17.18% (n=129) Of Postgraduate students.

When knowledge on ethics was compared between males and females, even though it is not Statistically significant, knowledge score was found to be more in males (4.45+ 0.92) than in females (4.38+ 0.77), The comparison according to year of study showed more knowledge regarding ethics in postgraduates (4.44 + 0.72) than in other groups but is not statistically significant(p>0.05) (Table.2 and Graph 2).

When attitude towards ethics was compared, even though it is not statistically significant, attitude towards practicing ethics was more in females than in males and more in post graduates than in other groups (Table3 and Graph 3)

When practice towards ethics was compared, practice of ethics is more among females and post graduates than in other groups (Table.4 and Graph 4).

Table 1 : Distribution Of study population according to gender and year of study

	N	%	Mean(SD)
Male	208	27.70%	4.5
Female	543	72.30%	2
1st year	102	13.58%	3.12
2nd year	116	15.45%	2.45
3rd year	123	16.38%	3.11
4th year	139	18.51%	3.89
intern	142	18.91%	3.78

Graph 1 : Distribution Of study population according to gender and year of study

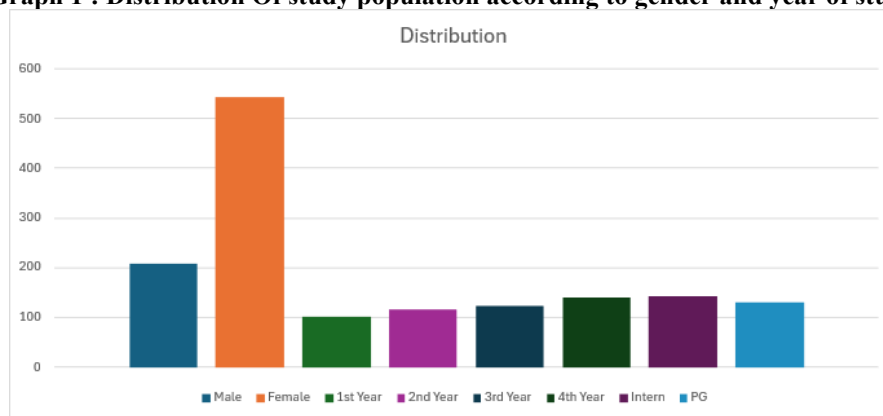


TABLE 2. Distribution of subjects according to mean knowledge score on ethics

	N	%	Mean(SD)	p value
<u>Gender</u>				
Male	208	27.70%	3.65(0.3)	0.11
Female	543	72.30%	3.14(0.8)	
<u>Year of study</u>				
1st year	102	13.58%	2.54(1.2)	
2nd year	116	15.45%	3.22(1.3)	
3rd year	123	16.38%	4.11(0.8)	0.19
4th year	139	18.51%	2.11(1.25)	
intern	142	18.91%	3.45(1.11)	
PG	129	17.18%	4.5(0.98)	

GRAPH 2. Distribution of subjects according to mean knowledge score on ethics

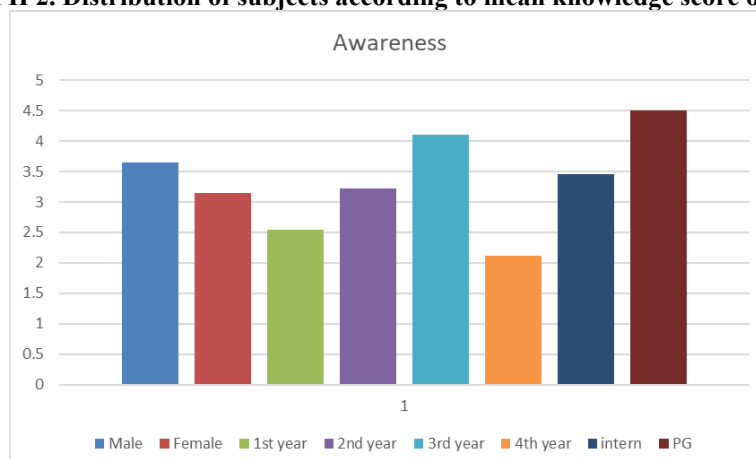


TABLE 3. Distribution of subjects according to mean attitude score on ethics

<u>Mean knowledge score on ethics</u>	<u>N</u>	<u>%</u>	<u>Mean(SD)</u>	<u>p value</u>
<u>Gender</u>				
Male	208	27.70%	2.11(0.99)	0.18
Female	543	72.30%	2.45(1.28)	
<u>Year of study</u>				
1st year	102	13.58%	3.12(1.11)	
2nd year	116	15.45%	2.44(1.25)	
3rd year	123	16.38%	4.11(1.24)	0.17
4th year	139	18.51%	2.54(1.88)	
intern	142	18.91%	3.5(1.76)	
PG	129	17.18%	3.17(1.09)	

GRAPH 3. Distribution of subjects according to mean attitude score on ethics

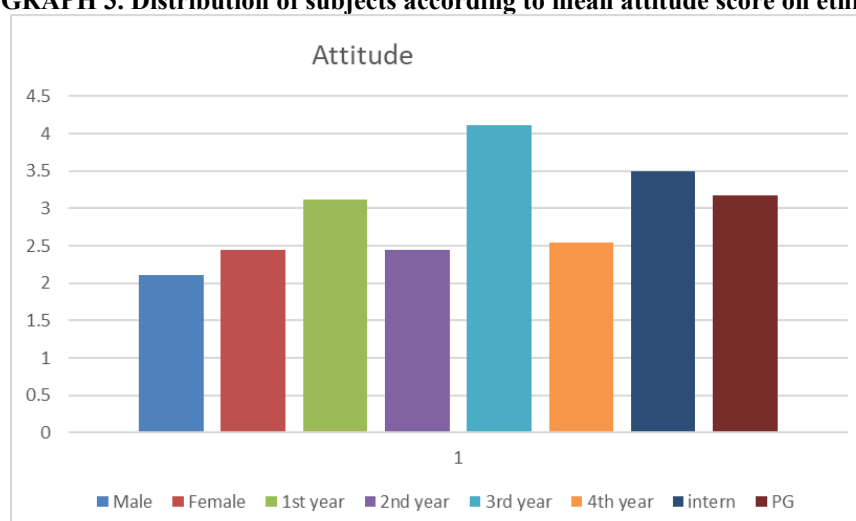
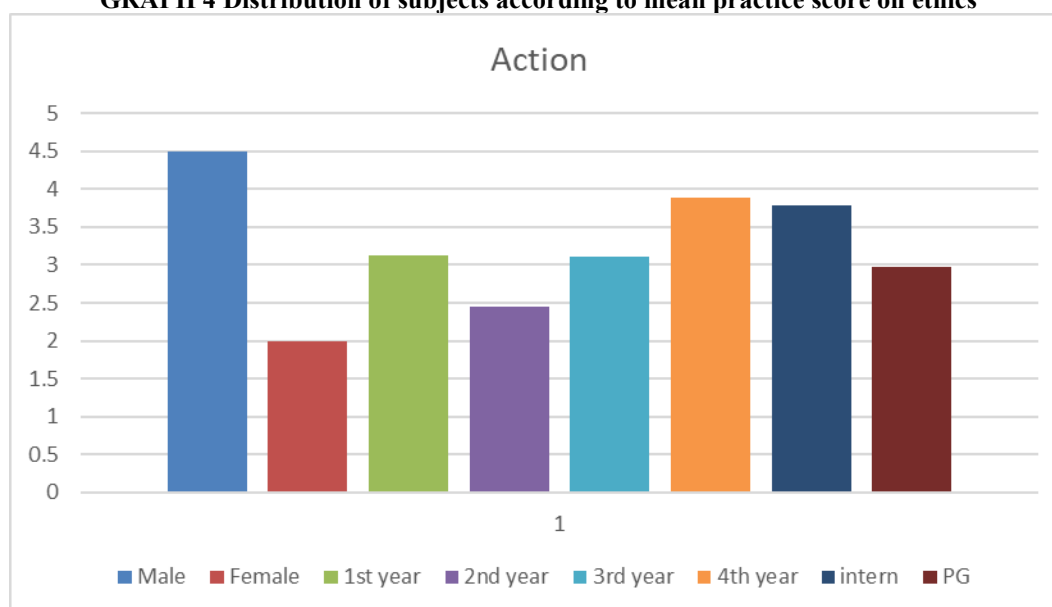


TABLE4 Distribution of subjects according to mean practice score on ethics

<u>Mean knowledge score on ethics</u>	<u>N</u>	<u>%</u>	<u>Mean(SD)</u>	<u>p value</u>
<u>Gender</u>				
Male	208	27.70%	4.5(0.67)	0.25
Female	543	72.30%	2(1.98)	
<u>Year of study</u>				
1st year	102	13.58%	3.12(1.59)	
2nd year	116	15.45%	2.45(1.94)	
3rd year	123	16.38%	3.11(0.66)	0.15
4th year	139	18.51%	3.89(0.45)	
intern	142	18.91%	3.78(1.88)	
PG	129	17.18%	2.98(0.56)	

GRAPH 4 Distribution of subjects according to mean practice score on ethics



IV. Discussion

It is essential for dental students to possess a comprehensive understanding of ethical issues relevant to their profession. The results of this study highlight critical concerns that need to be addressed within ethics education. Although participants showed a moderate level of awareness about ethical principles, several areas of insufficient knowledge were also revealed.

In recent times, there has been a growing rise in legal actions initiated by dissatisfied patients. Therefore, it is crucial for dental students to adhere strictly to ethical standards in their daily clinical practice. Unfortunately, when unexpected incidents occur in a clinical setting, some students may react out of fear and attempt to alter hospital records to protect themselves. However, tampering with records or evidence can have severe consequences and may prove disastrous for their professional careers. Hence, it is imperative for dental students to undergo formal training in ethics and consistently apply ethical principles in all aspects of their practice.

In the present study, out of 741 subjects, 27 subject was not aware of the term ethics. This is because the subject might probably have not attended the classes on ethics, or may not have come across the term yet. 109 considered that ethical values are not very important in their life. This may be attributed to their brought-up, parents' attitude and living conditions, influence of their bad companionship etc. 53 were not aware of Hippocratic oath, which may be because they were not taught about it in their academic curriculum or were not very enthusiastic to know about the basic ethics of the profession. They reported that they have heard of the term Hippocratic Oath, but were not aware of the content of it. 48 participants were not aware of the difference between law and morality. 268 were not interested in attending the classes on ethical issues and moral values, which may be because of busy academic schedule, lack of time and interest.

683 participants were in favor of ethical practice which may be due to the increasing participation and responsibility towards patient in training and practice of dentistry, while 12.9%(n=35) disagreed during a similar study conducted among medical practitioners, it was found that 100% of the practitioners favored an ethical practice.¹¹ It suggests that the importance of ethics or ethical practice is not established in dental students and also, they may be more towards unethical practice.

541 of the subjects know that proper patient consent and documentation of records will prevent a charge of negligence while 733 are taking consent from the patient before any oral examination or treatment procedures. During a similar study conducted among postgraduates, it was found that 84% of the participants believed that proper consent can prevent a charge of negligence, but only 80% bring it to implementation.¹²

This difference in knowledge and practice of taking consent attribute to the inadequate clinical experience of the student who might not have come across educated patients who can take a charge of wrong treatment, with documentation of records. Another reason for not taking consent may be mere negligence.¹³

In a study in Punjab notable disparities in understanding specific bioethical principles. Attitudinal responses highlighted a generally positive disposition towards ethical decision-making, although some students demonstrated uncertainty in navigating complex ethical scenarios¹⁴. While in other study Ninety-six percent of specialists agree that it is necessary to explain biological effects of biomaterials to the patients. Ninety percent of

specialists were aware of bioethics and biosafety issues with the use of biomaterials. Only 79% of specialists referred to the biosafety manual of the biomaterials.¹⁵

A greater proportion 117(50.9%) of the participants gave opinion that full description of risks and benefits should be stated in informed consent. The fact that most of the respondents are dedicated to learn more about bioethics was endured out by present data as 224(81.5%) were of the opinion that bioethics should be a part of curriculum at undergraduate level was reported in a study conducted in Pakistan.¹⁶

A study in Uganda reported about (80%) had a positive attitude towards informed consent and (85%) most often practiced the informed consent process¹². While The knowledge and attitude of medical college interns and postgraduates showed a significant difference in the Hippocratic oath, Nuremberg code, ICMR guidelines with p-values 0.002, 0.040 and 0.011, respectively was seen in a study in Visakhapatnam¹⁷.

V. Conclusion

Although students may begin their dental education with strong moral values, the intense demands of the program — including time constraints, academic pressures, clinical quotas, and fear of failing to meet required targets — can sometimes push them toward unethical behavior. Therefore, it is essential to place greater emphasis on professional ethics within dental education to safeguard patients and the public from unethical practices. Strengthening ethics training will help ensure that future dental professionals uphold the highest standards of integrity in their practice

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