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## Knowledge, attitudes and practices related to healthcare ethics among medical and dental postgraduate students in south India

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### Abstract

**Background:** Conventional medical training offers students little help in resolving the ethical dilemmas they will encounter as healthcare professionals. **Objective:** This article aims to assess the knowledge of, practices in and attitudes to healthcare ethics among postgraduate medical and dental students. **Methodology:** A questionnaire-based, cross-sectional study was carried out at two medical and dental schools in south India. A total of 209 medical and dental students were contacted and at least three were selected from each subspecialty of medicine and dentistry. One hundred and ninety-nine consented to participate and 172 returned the questionnaire (response rate 83%). The questionnaire, which was a 35-item pre-tested, self-administered questionnaire, included both closed and open-ended questions. The proposal for the study was approved by the institutional review board (IRB) and the permission of the respective heads of department was obtained. Written consent was obtained from each participant. The returned questionnaires were analysed using SPSS version 11.5. Descriptive analysis was carried out for all the data. The attitudes of the postgraduates of different courses towards practical ethical problems were compared using a Chi square test. **Results:** Medical and dental postgraduates had obtained their knowledge of bioethics from "other sources such as the Internet, newspapers, etc", followed by their "undergraduate training" and "experience at work". Nearly 68% of the postgraduates had not undergone any bioethics training. Nearly 98% of the medical postgraduates, as compared to 79% of the dental postgraduates, knew that their institution had an ethics committee. There was a difference between the medical and dental students in terms of their attitude to and knowledge of healthcare ethics, with the former having a superior knowledge of the subject and a better attitude. **Conclusions:** The medical and dental postgraduates come across ethical issues during their training, but are not equipped to resolve the ethical dilemmas they encounter. The dental postgraduates have less of an appreciation of healthcare ethics than their medical counterparts. The incorporation of a bioethics curriculum in the initial period of the postgraduate programme would be beneficial.

### Introduction

Doctors attending to patients in an emergency health situation have often had to face assaults on account of the recent increase in the awareness of patients' rights in India (1,2,3). These may be due to the paternalistic attitude of the doctor or a lack of understanding, or may simply be emotional outbursts. Advances in biomedical technologies such as life support and artificial reproductive technologies have brought new ethical dilemmas in their wake and have exacerbated the problem. Ethical dilemmas are usually encountered in areas such as abortion, contraception, treatment of a patient with a terminal illness, professional misconduct, maintaining a patient's confidentiality, the doctor's professional relationship with the patient's relatives, religion, traditional medicine, and conflict of interests. The conventional medical course offers students little help in resolving the ethical dilemmas they will encounter as healthcare professionals. Training in medical ethics has been made mandatory in the undergraduate curriculum by the regulatory body of medical education, the Medical Council of India (MCI); but it has been placed under forensic medicine (4). There are very few medical colleges in India with a standardised ethics curriculum, and with provisions for evaluation (5). The dental curriculum makes merely a passing mention of the principles of ethics (6).

Medical and dental postgraduate students undergo intensive training in their specialties and their focus is chiefly on organ specialisation. Postgraduates need intensive training in bioethics so that they have an appreciation of the patients' rights, cultural differences and research ethics, and are equipped to resolve ethical dilemmas.

There are varied views on strategising the teaching of bioethics. Most of them emphasise the importance of tailoring the teaching of the subject to the needs of the society concerned (7). The teaching of bioethics should also be holistic. For example, students could be taught about the value of the "heart" over the "mind", of the system of values and beliefs in a community, and of the need to understand the lived experiences of patients; while also incorporating various ethical approaches (8).

The dearth of specialists in bioethics and a lack of organised human resources has led to lack of appreciation of the urgent need to include bioethics in medical education in India. Further, there are concerns that teaching bioethics as an organised science might be problematic and would not be feasible (9). In India, due to the cultural mosaic (10), the teaching of bioethics needs to encompass the various perceptions of morality and ethics unique to people from different cultural, socioeconomic and geographical backgrounds (9). The training in this subject should be integrated with the local social and cultural values.

The first step in formulating an ethics curriculum may be to determine the level of the basic knowledge and attitudes of the postgraduates in the region. Few standard yardsticks have been designed to measure what is known and practised so as to ensure that educational efforts are better targeted (11). The objective of this study was to assess the knowledge of, attitude to and practices in healthcare ethics among medical and dental postgraduates.

**Methodology** The study was approved by the institutional review committee of the Amrita Institute of Medical Sciences, Cochin, India. Permission was obtained from the deans of all the four institutions that participated in the study.

**Study settings** A cross-sectional, questionnaire-based study was conducted in two medical colleges in Kerala and two dental colleges. The medical colleges were the Amrita School of Medicine and the Government Medical College, Calicut, while the dental colleges were the RV Dental College, Bangalore and the Government Dental College, Trivandrum. These institutions were selected since, at the time of the study (2010–11), they were offering postgraduate courses in all medical, surgical and dental specialties.

**Study population** Postgraduate students who had enrolled in the MD, MS, MDS and DNB courses in these institutions were selected. A sampling frame of all postgraduate students in each institution was developed and three from each specialty were selected randomly. For example, three out of 10 were selected from the MD course. In the case of the dental postgraduates, all of them were selected since there were fewer subjects for each specialty. A total of 209 subjects were selected.

**Questionnaire** We adapted the questionnaire of a previous study (7) to make it suitable to our objectives. The 35-item questionnaire was a self-administered, semi-structured one with both open and close-ended questions, designed to assess the students' knowledge, attitudes and practices in the sphere of healthcare ethics. The content of the questionnaire was validated before the study. The demographic variables, such as the year in which the student was studying, and his/her specialty, age and gender, were included in the questionnaire.

The second part of the questionnaire consisted of questions regarding the importance of a knowledge of ethics, the source of this knowledge and the source of consultation in case an ethical problem arises. The respondents were asked whether they were aware of the presence of an ethics committee in their institution, and about the role of these committees. The

questionnaire mentioned eight roles that ethics committees might play and the respondents were asked to indicate whether they thought the committees played these roles by choosing between "yes," "no" and "not sure."

In the final part of the questionnaire, the respondents were asked to answer questions on everyday ethical issues. They were asked if they agreed or disagreed with certain statements concerning ethical conduct, autonomy, paternalism, confidentiality, informing patients about wrongdoing and informing relatives about the patient's condition, informed consent, and the influence of religious beliefs on the treatment. The respondents were required to grade their responses on a Likert scale ranging from 1 to 5.

**Informed consent** All the participants selected were given the participant information sheet, which explained the details of the study, and written informed consent was obtained from those who agreed to participate in the study.

**Statistical analysis** The data were analysed using Statistical Package for Social Sciences (SPSS) – version 11.5. Descriptive analyses were carried out for all the data. The attitudes of the dental and medical postgraduates towards practical ethical problems were compared using a Chi-square test. Statistical significance was fixed at the level of  $p < 0.05$ . In Table 3, the category of "not sure" was merged with that of "disagree" as the responses in the "not sure" category were less than five or zero. Also, the former category is likely to veer towards the category of "disagree" rather than "agree".

## Results

We contacted 209 postgraduates, of whom 199 consented to participate. A total of 172 subjects returned the completed questionnaire. Thus, the response rate was 83%. The mean age of the medical and dental students was  $28.1 \pm 1.7$  and  $29.9 \pm 3.6$  years, respectively. As many as 83.8% of the participants in the study were males. Table 1 presents the characteristics of the study participants.

Nearly all the medical postgraduates had knowledge of the Hippocratic Oath, but surprisingly, only 23.4% of them had knowledge of the Indian Council of Medical Research (ICMR) guidelines on ethics for research, the Nuremberg Code and the World Medical Association's Helsinki Declaration. Very few dental graduates knew about these guidelines. Table 2 presents the responses of the medical and dental postgraduates to questions on their knowledge of healthcare ethics.

More medical postgraduates considered knowledge of bioethics important in their daily practice than their dental counterparts. The dental postgraduates had encountered questions related to ethics from their patients less frequently than had the medical postgraduates. Most often, it was the medical rather than the dental postgraduates whom patients asked questions regarding the diagnosis. Of the medical postgraduates, 59.5% always discussed their daily cases with their colleagues, compared to 47.5% of their dental counterparts.

**Table 1**  
**Characteristics of study participants**

Specialties	Medical		Dental	
	N	%	n	%
Number	111	64.5	61	35.5
Gender				
Female	21	18.9	7	11.5
Male	88	79.2	54	88.5
Year of study				
First	42	37.8	29	47.5
Second	42	37.8	12	19.7
Third	27	24.4	20	32.8
Mean age in years	28.1± 2.7		29.9± 3.6	

The postgraduates had obtained their knowledge of bioethics from sources such as the Internet and newspapers, followed by their undergraduate training and experience at work. Nearly 68% of them had not attended any bioethics training during their postgraduation.

Nearly 98% of the medical postgraduates knew that their institution had an ethics committee, whereas only 79% of the dental postgraduates were aware of this. Most of the postgraduates were not sure if there was a separate ethics committee for animal and human research. As for the various roles of ethics committees, 76.6% and 75.4 % of medical and dental postgraduates, respectively, felt that the role of ethics committees is to conduct bioethics conferences. Nearly the same percentages thought that the role of these committees is to teach bioethics to students. Table 3 shows the students' responses regarding the role of ethics committees.

Nearly 46.9% and 80.3% of medical and dental postgraduates, respectively, believed that they knew best, irrespective of the patients' opinion (Table 4). In case of any wrongdoing in treatment, 80.2% of medical and 62.3% of dental postgraduates informed their patients.

Nearly 83.8% of the medical postgraduates agreed that informed consent was required for treatment such as surgery, but did not feel it was necessary for investigations. The corresponding figure for the dental postgraduates was 77.1%. Of the medical postgraduates, 11.7% agreed that ethical conduct is required to avoid legal issues. The corresponding figure for dental postgraduates was 16.4%. Overall, 92.7% of the participants had obtained informed consent for their research thesis. Thirty-five per cent of the postgraduates correctly expanded the abbreviations IRB, ERB (ethical review board) and IEC (institutional ethics committee), while 51% provided the wrong answers, and 14% reported that they had not heard of these terms.

The seniority of the students and their gender did not make any significant difference to their knowledge of ethics.

Forty-eight per cent of the medical respondents reported that they would respect the decision of their patients to refuse treatment, whereas the corresponding figure for the dental postgraduates was only 27.5%. As can be seen in Table 5, when

**Table 2**  
**Participants' knowledge of healthcare ethics**

Do the participants know the main contents of:		Medical		Dental	
		N	%	n	%
<b>Hippocratic oath</b>	Yes	111	100	54	88.5
<b>Nuremburg code</b>	Yes	26	23.4	1	1.6
<b>ICMR guidelines</b>	Yes	26	23.4	13	21.3
<b>Helsinki Declaration</b>	Yes	26	23.4	5	8.2
<b>How important is knowledge of ethics to you in your work?</b>	Very	2	1.8	4	6.6
	Moderately	25	22.5	15	24.5
	A little	82	73.9	42	68.9
	Not at all	2	1.8	0	0
<b>Do you entertain patients' questions during their visits?</b>	Yes	94	84.7	56	91.8
	No	17	15.5	5	8
<b>How often do you come across any ethical issues?</b>	Daily	22	19.8	0	0
	Weekly	13	11.7	7	11.5
	Monthly	15	13.5	15	24.6
	Yearly	30	27	16	26.2
	Never	31	28	23	37.7
<b>How often do patients ask you about their diagnosis?</b>	Never	5	4.5	0	0
	Seldom	39	35.1	17	27.9
	Always	67	60.4	44	72.1
<b>How often do you discuss your daily cases with your colleagues?</b>	Seldom	45	40.5	32	52.5
	Always	66	59.5	29	47.5
<b>How did you acquire your knowledge of bioethics?</b>	During training	29	26.1	14	23
	Experience at work	10	9	5	8.1
	Lectures/Seminar	6	5.4	2	3.3
	One's own reading	16	14.5	1	1.6
	Others (internet, court reports, newspapers, etc)	50	45	39	64
<b>Have you attended training in bioethics</b>	Yes	36	32.4	20	32.8
	No	75	67.6	41	67.2
<b>Have you taken informed consent?</b>	No	3	2.7	5	8.2
	Verbal	20	18	10	16.4
	Signed	88	79.3	46	75.4
<b>Is there an ethics committee in your institution?</b>	Yes	108	97.3	48	78.7
	No	0	0	7	11.5
	Not sure	3	2.7	6	9.8
<b>Does your institute have separate committees for reviewing animal and human research projects?</b>	Yes	15	13.5	0	0
	No	26	23.4	29	47.5
	Not sure	70	63.1	32	52.5

faced with ethical dilemmas, it was the heads of departments who were consulted most often (by 62.2% of medical and 55.7% of dental postgraduates), followed by the students' supervisors. The ethics committee was the third choice (9% of medical and 1% of dental respondents).

**Discussion**

This is probably the first study to assess the knowledge, practices and attitudes related to healthcare ethics among

**Table 3**  
Responses regarding ethics committees

What do you think an ethics committee's role is?		Medical		Dental	
		n	%	n	%
<b>To ensure standard ethical practices among healthcare personnel</b>	Yes	101	90.7	59	96.7
	No	0	0	2	3.3
	Not sure	10	9.3	0	0
<b>To advise healthcare personnel when they encounter ethical/legal problems</b>	Yes	85	76.6	38	62.3
	No	5	4.5	15	24.6
	Not sure	21	18.9	8	13.1
<b>To advise the administration on ethics and rules in the institution</b>	Yes	102	91.9	52	85.2
	No	0	0	0	0
	Not sure	9	8.1	9	14.8
<b>To approve and guide research</b>	Yes	98	88.3	54	88.5
	No	0	0	2	3.3
	Not sure	13	11.7	5	8.2
<b>To settle conflicts between professionals</b>	Yes	49	44.1	29	47.5
	No	18	16.2	17	27.9
	Not sure	44	39.7	15	24.6
<b>To settle conflicts between professionals and patients' relatives</b>	Yes	59	53.2	34	55.7
	No	13	11.7	12	19.7
	Not sure	39	35.1	15	24.6
<b>To teach medical ethics to students</b>	Yes	90	81.1	49	80.3
	No	5	4.5	2	3.3
	Not sure	16	14.4	10	16.4
<b>To conduct bioethics conferences</b>	Yes	85	76.6	46	75.4
	No	0	0	2	3.3
	Not sure	26	23.4	13	21.3

postgraduates in medicine and dentistry in India. While the results of the study show that there is a difference between the dental and medical postgraduates' knowledge and attitudes, it is not significant. The responses are reflective of categories such as different subspecialties, ie medical, surgical, preclinical and dental, year of study and gender.

Dental postgraduates encounter ethical dilemmas less frequently than their medical counterparts. This probably explains the difference between the two as far as appreciation of ethical issues is concerned.

The respondents had obtained their knowledge of ethics from various sources. Though it appeared that their postgraduate training was a key source of knowledge, it did not contribute more than their experience at work, their own reading and what they learnt by attending seminars. One reason for the difference in knowledge between the medical and dental postgraduates could be that perhaps only those who had encountered ethical issues may have explored other sources of knowledge, such as continuing medical education or workshops. The undergraduate ethics training does not adequately equip postgraduates to deal with the complex ethical issues they encounter in their daily work, which involves direct and often crucial intervention in others' lives (12). A separate module for bioethics, accompanied by evaluation, needs to be incorporated into the medical and dental curricula. The present medical and dental curricula, drawn up by the MCI

**Table 4**  
Attitudes of participants towards healthcare ethics

Attitudes		Medical		Dental		p value
		N	%	N	%	
Doctors know the best irrespective of patients' opinion	Agree	52	46.9	49	80.3	0.001
	Disagree	59	53.1	12	19.7	
Patient should always be informed of wrongdoing	Agree	89	80.2	38	62.3	0.011
	Disagree	22	19.8	23	37.7	
Patients' wishes should always be adhered to	Agree	55	49.6	31	50.8	0.87
	Disagree	56	50.4	30	49.2	
Confidentiality cannot be maintained in modern care and should be abandoned	Agree	10	9	9	14.7	0.25
	Disagree	101	91	52	85.3	
Consent is required only in case of operations and not for tests and medications	Agree	18	16.2	14	22.9	0.27
	Disagree	93	83.8	47	77.1	
Certain medical practitioners charge more from rich patients to compensate for treating the poor	Agree	28	25.2	15	24.6	0.92
	Disagree	83	74.8	46	75.4	
Do you agree with this?						
Ethical conduct is important only for avoiding legal action	Agree	13	11.7	10	16.4	0.38
	Disagree	98	85.3	51	83.6	

The "Not sure" category was merged with the "Disagree" category  
A p value <0.05 was considered significant

and Dental Council of India, do not prescribe evaluation either by a written or oral examination (4–6). Unless such evaluation is incorporated, medical teaching institutions and students will not feel that the learning of bioethics is important.

Bioethics or medical ethics has to be taught by a specialist in medical ethics. At present, the forensic and community medicine faculties teach medical ethics and they focus more on medical jurisprudence (4,5). There is a need to encourage training of medical faculty in ethics or bioethics and eventually, to create a separate and independent department of medical ethics or bioethics. Bioethicists from different backgrounds, such as the social sciences, philosophy and medical sciences, could be faculty members in the department of bioethics.

It is interesting to note that though both the medical and dental postgraduates were aware of the difference between animal and human research ethics committees, they did not know about the functions of the ethics committee in their institution. A similar observation has been made by studies conducted elsewhere (7,13,14). This could be due to the committees' limited role, which perhaps relates only to research ethics and not to clinical ethics training.

Most of the research carried out in dentistry is by postgraduates and very few studies are carried out by independent researchers or faculty members (15–18). Most ethics committees review the research proposals, unless the study is funded. Sometimes, a subcommittee of the main IRB



**Table 5**  
**Responses regarding the practice of healthcare ethics**

Attitudes	Medical		Dental	
	n	%	n	%
<i>When people holding certain religious beliefs refuse to take blood, undergo surgery or accept treatment, what is your stand?</i>				
Respect the patient's decision	53	47.8	17	27.9
Try to perform the procedure forcibly	0	0	2	3.3
Refer to a doctor who shares the patient's beliefs	49	44.1	20	32.8
Any other (specify)	9	8.1	22	36
<i>If you encounter any ethical problem, who will you approach?</i>				
Colleague	1	0.9	5	8.2
Supervisor	10	9	12	19.7
Head of department	69	62.2	34	55.7
Hospital administrator	5	4.5	2	3.3
Ethics committee	10	9	1	1.6
Professional association	3	2.7	1	1.6
Priest	6	5.4	2	3.3
Textbooks, the Internet	5	4.5	2	3.3
Close friend/family	2	1.8	2	3.3

is formed to review postgraduate research. The data available in 2003 showed that only 3% of dental teaching institutions in India (n=292) had effective research ethics committees (19). This is bound to result in a lack of knowledge of the functions of ethics committees among postgraduates. The master's programme in dentistry does not have a mandatory module on bioethics or research ethics (6).

Unlike the dental postgraduates, the medical postgraduates knew about most of the issues pertaining to the practice of ethics. The difference in their responses to issues such as adherence to the patient's wishes, confidentiality, the paternalistic attitude of doctors and the need to obtain consent for procedures can be traced to differential training in bioethics.

The majority of the respondents chose to consult their head of department to resolve their ethical dilemmas, while the thesis supervisor was the next preferred option. Another study (7), too, found that most students preferred to resolve ethical issues with the help of their departmental heads rather than by approaching the ethics committee or bioethicist consultations. The expertise of the heads of department and thesis supervisors on ethical issues is uncertain, and it is doubtful whether they would consult the ethics committee to resolve ethical dilemmas.

Most of the bioethics expertise in India is concentrated in research ethics, which is different from clinical ethics. The majority of the ethics committees focus on the ethical protection of human beings in research settings. The existence of clinical ethics committees in hospitals is very important for

moral deliberation on clinical cases. We suggest that healthcare personnel be trained to use different methods of deliberation on the moral issues (20) involved in clinical cases – a standard practice in western medical training. These methods need the expertise of clinical bioethicists who can form a part of comprehensive training in bioethics for healthcare personnel.

We could assess the basic knowledge and attitudes of postgraduate medical and dental students regarding healthcare ethics in order to obtain basic information for the framing of a bioethics course in the medical curriculum. This study has the limitation that it does not cover a wider range of postgraduates, as well as the fact that it is only descriptive in nature.

## Conclusion

Medical and dental postgraduates frequently encounter ethical issues in their training, but lack the sensitivity to resolve these dilemmas. The dental postgraduates have less knowledge of healthcare ethics and the practices related to it, compared to their medical counterparts. The incorporation of a bioethics curriculum in the initial period of the graduation and post graduation programmes would be beneficial.

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## Publication misconduct among medical professionals in India

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### Abstract

*This study was planned as an exploratory study to determine the extent of occurrence of misconduct in publication (gift-authorship, ghost-authorship, falsification of data, fabrication of data, plagiarism, and duplication) amongst biomedical researchers. It was a questionnaire-based study, conducted at 9 institutions; 6 medical colleges (4 government-run and 2 private), 1 non-teaching government hospital, and 2 corporate hospitals, located in northern, central and southern India. The study was conducted between August 2012 and March 2013. 155 senior residents (<3 years after post-graduation) and young faculty members (<10 years after post-graduation) with at least five previous publications were administered a structured questionnaire, in which no identifying information was collected. In addition to personal characteristics, the information collected included their knowledge of publication ethics, their opinions about the prevalence of these practices among their colleagues, and details of any first-hand information on publication misconduct. 155 responses were included for analysis. 141 (91%) respondents agreed that they had some knowledge of publication ethics; but only 29% believed it was adequate. The most commonly observed misconduct was offering gift authorship, reported by 101 (65%); followed by alteration of data reported by 88 (56%). Plagiarism was observed by 83 respondents (53%); while 52 (33.5%) respondents had observed a colleague's name being omitted from a paper to which she/he had significantly contributed. A majority of respondents in the present study reported witnessing publication misconduct, thereby revealing the common occurrence of this problem among Indian biomedical researchers.*

### Introduction

Publishing research studies has become an important aspect of career advancement and promotion for the medical fraternity. With this desire to further professional aspirations, misconduct has crept into medical research in different forms. Research misconduct has been defined as: "fabrication, falsification, or

plagiarism in proposing, performing, or reviewing research, or in reporting research results; fabrication is making up results and reporting them; falsification is manipulating research results, equipment, or changing or withholding data or results such that the research is not accurately represented in the research record; plagiarism is the presentation of another person's ideas, processes, results, or words without giving appropriate credit" (1). Research misconduct does not include honest error or differences of opinion (1), and implies wilful acts. Apart from this, misconduct may also be manifested in not conforming to the authors' guidelines of a particular journal and hence offering "gift authorship" (inclusion among the authors of an individual who does not fulfil the requirements for authorship), "ghost authorship" (non-inclusion of individuals as authors who played an effective part in the work and were qualified for authorship), "duplication" (publication of the same paper in different journals with little or no change at all in its content) (2). It may also involve "salami" publishing, where authors slice up their research, carving multiple papers from a single study with the sole aim of having multiple publications credited to them

There is paucity of data from India on the prevalence of misconduct in publication among researchers. This study was planned to assess the prevalence of misconduct as observed by young medical professionals.

### Methods

The study was conducted from August 2012 to March 2013. Initially, detailed discussions on publication misconduct were held with a few senior faculty members of medical colleges, having experience in the field of biomedical publishing. Based on these discussions, a structured questionnaire was prepared to elicit responses on publication misconduct from among researchers. It was pre-tested on 10 medical researchers and modified where necessary. The final version was used for