

Effectiveness of formal training in bioethics of 3rd semester undergraduate medical students in recognizing bioethical issues and principles in patient care

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ABSTRACT

Introduction: Despite well-described code of conduct for physician the recent increase in litigation against doctors is an issue of concern which says that doctors and health professionals are confronted with many ethical problems regularly. The aim of the present study was to see the ability to recognize different bioethical issues in relation to patient care among 3rd semester undergraduate students and also the change in the pattern of recognition of bioethical issues after formal training. **Methods:** This cross-sectional study was carried out using self-administered questionnaire among the fifty 3rd semester undergraduate MBBS students. Each question was designed in a “Likert scale” pattern carrying a minimum score of 1 (1 = strongly disagree) and maximum score of 5 (5 = strongly agree). After 6 months of training and bedside clinical exposure, students were assessed again with same set of questionnaire. The statistical analyses were performed using SPSS 17.0. **Results:** All of the respondents in the study group were of the opinion that medical ethics is very important but only 24% aware about existence of ethics committee in the institute. Changes has been observed after clinical exposure in response like disclosure of patient’s condition to close relatives (agreed 54% versus 84% pre and postexposure, respectively) and discussion of related ethical issues with clinical case discussion (agreed 74% versus 94% pre and postexposure, respectively). Some of the issues needs further clarification even after clinical exposure like doctors must not refuse to do abortion (56% disagreed and 38% agreed), consent regarding treatment in children (60% disagreed and 32% agreed), and uses of branded versus generic drugs (76% generic and 26% branded). **Conclusion:** There is a need to stress the importance of ethical practice in the undergraduate curriculum to make the doctors confident enough to deal the ethical dilemma for themselves and better professional efficiency.

Keywords: Indian medical graduate, medical bioethics, patient care, undergraduate medical students

Introduction

The physicians code of conduct has been practiced in traditional Indian systems of medicine since eternity. The “*Primum non nocere*” (do no harm) is the universal principle besides other principles, which may be applicable to the prevalent culture and system of the society.^[1] Education in medical bio-ethics is a standard expectation in the medical school curriculum

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How to cite this article: Barman B, Srivastava TK, Sarma A, Nath CK. Effectiveness of formal training in bioethics of 3rd semester undergraduate medical students in recognizing bioethical issues and principles in patient care. J Family Med Prim Care 2020;9:2871-6.

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Received: 18-03-2020

Revised: 25-04-2020

Accepted: 11-05-2020

Published: 30-06-2020

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_405_20

and is more prevalent during the preclinical years before medical students start seeing the realities of patient care in clinical practice. Although bio-ethics is considered an essential component of medical practice, yet it has never been a part of the proper medical curriculum. Implementation of a comprehensive curriculum that includes assessment for the entire domain of bio-ethics in the undergraduate medical course will definitely help to produce professionally competent Indian Medical Graduates (IMGs) who can function appropriately and effectively as a physician of first contact of the community with requisite knowledge, skills, attitudes, values, and responsiveness. Medical council of India (MCI) has already prepared Attitude, Ethics, and Communication (AETCOM) module based on the undergraduate curriculum for the IMG giving the importance of ethical values, patient care, and communication skills. Great emphasis has also been placed on collaborative and inter-disciplinary teamwork, professionalism, and respect in professional relationships with due sensitivity to differences in thought, social and economic position, and gender.^[2]

There have been many reports across the globe stressing the importance of incorporating ethical and legal issues in medical curriculum especially in the beginning with pre-clinical courses.^[3,4] Medical ethics are integral to all clinical application like disease prevention, treatment, and cure, particularly in areas like genetic counseling and end-of-life care and a foundation in medical ethics is essential for students to become doctors of global standard. With this background the present study was conceived with the aim of the ability to recognize different bio-ethical issues in relation to patient care among 3rd-semester students. Further the change in the pattern of recognition of bioethical issues after formal training on principle of bioethics was also evaluated. The results of this study will help us to take steps to integrate bio-medical ethics formally in the curriculum of undergraduate education.

Material and Methods

A cross-sectional study was carried out using a self-administered questionnaire among the 50 3rd semester undergraduate MBBS students in “North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences” an autonomous institute, Ministry of Health and Family Welfare, Government of India located in Shillong, Meghalaya. Two sets of questionnaires were given based on the principles of medical bioethics. The first set of questionnaires covered demographic information and four basic questions. The second set of questionnaires covered 14 self-administered questions on common ethical issues and each question was designed in a “Likert scale” pattern carrying a minimum score of 1 (1 = strongly disagree) and a maximum score of 5 (5 = strongly agree). The students were asked to fill a structured questionnaire form after verbal information and consent. The questionnaires were validated first by three senior medical faculty who has undergone training in the revised medical education course and by five students to confirm clarity and authenticity before distribution. Following this,

the questionnaire was distributed amongst 50 undergraduate students of 3rd semester batch. The students were then given lectures on bioethics by teachers trained in basic and advanced medical education programme by MCI from the institute over next 6 months. After 6 months of training and bedside clinical exposure, students were assessed again with the same set of questionnaires. The study was done as a part of the medical education programme in our institute. The permission was taken from the medical education unit of the institute and a duly signed informed consent form was taken from each participant. Confidentiality regarding the participants’ personal information was maintained, and the anonymity of the students was ensured. The statistical analyses were performed using SPSS 17.0 (Chicago, USA).

Results

Among the 50 participants whose responses were analyzed, 28 (56%) were male and 22 (44%) were female [Figure 1]. Their ages ranged from 20 to 22 years.

Table 1 describes the students’ attitude to medical ethics and the source of their information on this. All of the students had some basic idea about medical bioethics and all of them felt that knowledge of bioethics is very important and to be included in medical curriculum. Overall, only 24% of the respondents had knowledge of the existence of the institutional ethics committee (IEC) in the institute. Lectures (86%) and clinical classes (14%) were considered the predominant sources of knowledge followed by ethical books/journals (6%) [Figure 2].

Table 2 describes the student’s knowledge in relation to different components of bioethical issues. Most (96%) of the students felt patients should always be informed of wrong doing by anyone involved in his/her treatment. Although the majority 76% of them agreed that patient wishes must be adhered on the other hand 50% of students felt doctor should do what is best irrespective of the patient’s opinion. The majority (82%) of them disagreed for the statement confidentiality cannot be maintained in modern care. Regarding disclosure of patient’s condition to the close relative, almost half of them agreed and one-fifth of them being in neutral position. Nearly 78% of them disagreed that consent is required only in case of operations and not for tests and medications. Most (72%) of them disagreed certain medical practitioners charging more from rich patients to

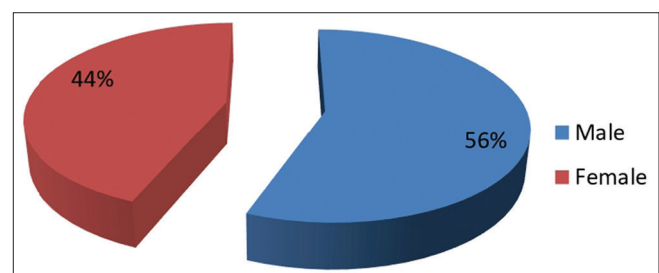


Figure 1: Sex distribution of responders

compensate for treating the poor is a good practice and 24% of the students were uncertain about this. It is interesting to note that 16% agreed and 14% were uncertain as to whether ethical conduct is important only to avoid legal action and 70% disagreed with the statement. Majority (78%) of the students agreed that ethical issues of patient care must also be discussed during clinical rounds. Half of the students were of opinion privacy of the patient must not be ignored for benefit of larger group and 38% of them disagreed about this. Majority of the (74%) agreed that children should never be treated without the consent of their parents or guardian except in case of emergency and 20% of students were neutral about the statement. There is an almost equivocal response regarding the law allows abortion as one third of students agreed, disagreed, and neutral in the

comment that doctors must not refuse to do abortion. More than half of students (56%) disagreed with the statement it's better to use brand name rather than generic name of drug in one's practice and 16% of students were uncertain about this. Most of them (90%) of them felt clinically confirmed cases must undergo laboratory investigation as a routine.

Table 3 describes the response following clinical posting and theoretical lectures oh bioethics by senior teachers. All of the students agreed that patient should always be informed of wrong doing by anyone involved in his/her treatment. Majority (86%) of students still believe that patient's wishes should always be adhered to and at the same time most of them (96%) disagreed that doctor should do what is best irrespective of the patient's opinion

Table 1: Participants according to their knowledge of medical ethics (Total number 50)

Questionnaire	Response	Respondents
Do you have any basic knowledge about medical professionalism and ethics	Yes	50 (100%)
	No	0
Is there an ethics committee in your institution?	Yes	12 (24%)
	No	0
	Do not know	38 (76%)
How important is to implement knowledge of bio-ethics in medical curriculum?	Not important	0
	Important	0
	Very important	50 (100%)
What is your source of knowledge?	Lecture classes	40 (80%)
	Ethical books/journal	03 (06%)
	Clinical training	07 (14%)
	Television/Newspaper	0

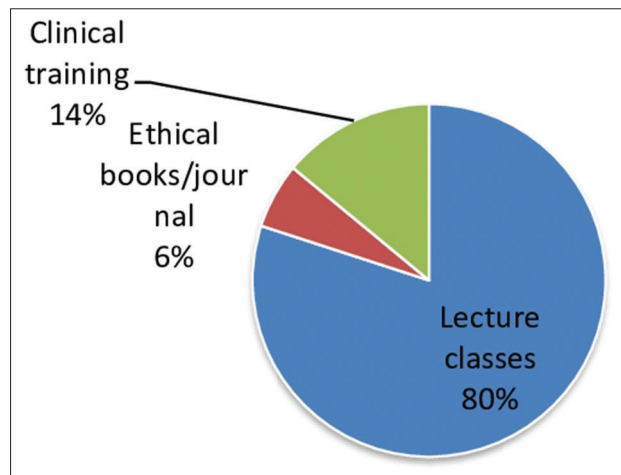


Figure 2: Frequencies of respondents regarding source of knowledge

Table 2: Participant's knowledge before exposure to clinical posting (total number 50)

Question/Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Patient should always be informed of wrong doing by anyone involved in his/her treatment	0	0	2 (4%)	18 (36%)	30 (60%)
Patients' wishes should always be adhered to	0	4 (8%)	8 (16%)	19 (38%)	19 (38%)
The doctor should do what is best irrespective of the patient's opinion	2 (4%)	15 (30%)	8 (16%)	11 (22%)	14 (28%)
Confidentiality cannot be maintained in modern care	11 (22%)	30 (60%)	7 (14%)	1 (2%)	1 (2%)
Close relatives must always be told about the patient's condition	2 (4%)	10 (20%)	11 (22%)	19 (38%)	8 (16%)
Consent is required only in case of operations and not for tests and medications	20 (40%)	19 (38%)	2 (4%)	9 (18%)	0
Certain medical practitioners charging more from rich patients to compensate for treating the poor is a good practice	16 (32%)	20 (40%)	12 (24%)	1 (2%)	1 (2%)
Ethical conduct is important only for avoiding legal action	15 (30%)	20 (40%)	7 (14%)	6 (12%)	2 (4%)
During clinical rounds along with clinical aspects of a patient's care, it is also essential to discuss ethical issues of that patient	0	5 (10%)	6 (12%)	35 (70%)	4 (8%)
Privacy of one patient may be ignored for the benefit of the larger group	8 (16%)	11 (22%)	6 (12%)	13 (26%)	12 (24%)
Children (except in emergency) should never be treated without the consent of their parents or guardian	1 (2%)	2 (4%)	10 (20%)	21 (42%)	16 (32%)
If law allows abortion, doctors must not refuse to do abortion	5 (10%)	9 (18%)	17 (34%)	16 (32%)	3 (6%)
In one's practice it is better to use the brand name than the generic name of a drug	6 (12%)	22 (44%)	8 (16%)	13 (26%)	1 (2%)
Clinically confirmed cases should also undergo laboratory investigations as a routine	0	3 (6%)	7 (14%)	32 (64%)	8 (16%)

Table 3: Participant's knowledge after exposure to clinical posting (total number 50)

Question/Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Patient should always be informed of wrong doing by anyone involved in his/her treatment	0	0	0	12 (24%)	38 (76%)
Patients' wishes should always be adhered to	0	5 (10%)	2 (4%)	32 (64%)	11 (22%)
The doctor should do what is best irrespective of the patient's opinion	24 (48%)	24 (48%)	2 (4%)	0	0
Confidentiality cannot be maintained in modern care	2 (4%)	30 (60%)	6 (12%)	10 (20%)	2 (4%)
Close relatives must always be told about the patient's condition	2 (4%)	6 (12%)	0	31 (62%)	11 (22%)
Consent is required only in case of operations and not for tests and medications	23 (46%)	21 (42%)	0	6 (12%)	0
Certain medical practitioners charging more from rich patients to compensate for treating the poor is a good practice	35 (70%)	11 (22%)	0	4 (8%)	0
Ethical conduct is important only for avoiding legal action	37 (74%)	10 (20%)	0	3 (6%)	0
During clinical rounds along with clinical aspects of a patient's care, it is also essential to discuss ethical issues of that patient	0	3 (6%)	0	11 (22%)	36 (72%)
Privacy of one patient may be ignored for the benefit of the larger group	15 (30%)	11 (22%)	3 (6%)	15 (30%)	6 (12%)
Children (except in emergency) should never be treated without the consent of their parents or guardian	17 (34%)	13 (26%)	4 (8%)	10 (20%)	6 (12%)
If law allows abortion, doctors must not refuse to do abortion	16 (32%)	12 (24%)	3 (6%)	17 (34%)	2 (4%)
In one's practice it is better to use the brand name than the generic name of a drug	28 (56%)	10 (20%)	0	12 (24%)	0
Clinically confirmed cases should also undergo laboratory investigations as a routine	0	0	0	39 (78%)	11 (22%)

which is in contrast to the pretraining response (34%). Although majority of students disagreed that confidentiality cannot be maintained in modern era, a group of students (16%) being neutral in this response. Most of the students are cleared about the concept of disclosure of patient's condition to close relatives as compared to pre-training response (agreed 54% (pre-exposure) versus 84% (postexposure)). Majority (88%) of the students also noted the importance of concept form as they disagreed that consent is required only in case of operations and not for tests and medications. Most of them were not agreed that ethical conduct is important only for avoiding legal action. One of the important responses observed after their bedside clinical posting was that most of them were concerned about the discussion of related ethical issues with clinical case discussion (agreed 74% (preexposure) versus 94% (postexposure)). Some of the issues need further clarification even after clinical exposure like doctors must not refuse to do abortion (56% disagreed and 38% agreed), consent regarding treatment in children (60% disagreed and 32% agreed) and uses of branded versus generic drugs (76% preferred generic brand and 26% preferred branded name). Overall, there is a significant reduction of neutral response between pre and posttraining evaluation (preexposure 101 neutral response and postexposure 20 neutral response).

Discussion

To construct an effective ethics teaching curriculum for undergraduate students, the first step is to determine their current basic knowledge, perceptions, and practices related to ethical issues and patients' rights. Ethical problems are common among the students in our study. The majority of students responded that it is very important to implement a course on bioethics

in the medical curriculum. This indicates the importance of preparing residents to deal with ethical dilemmas and providing them with guidance, support, and supervision. *Sullivan BT et al.* has shown that a focused medical ethics driven curriculum may guide students for making better decisions beyond the practicing physicians with the tools like communication, problem-solving issues, etc.^[5] Ethics committees are the most prominent formal institutional mechanism for considering and resolving ethical dilemmas in medicine. Despite that, hospital ethics committees are largely untested, unproven, and unknown entities.^[6] In the present study, only 24% of the students were aware of the existence of the institutional ethics committee and many of them did not know its specific functions. This highlights the need for the administrative section of teaching hospitals to publicize their work at regular intervals for the benefit of trainees. The institutional ethics committee should publish reports related to its involvement in different health-related activities within the institution, and these should be circulated among the students as well. The main sources of ethics knowledge as quoted by the study population were classroom lectures, clinical case discussion, and books on ethics like textbooks on forensic medicine. This finding is similar to that in previously completed studies.^[7,8]

Clinical exposure enhances the medical skills along with learning strategies^[9-11] and our study showed a significant change toward accountability, professionalism, and respect to patient's decisions, which should be present in each health professional. However a study in private medical university showed a decline in professionalism at the beginning of clinical clerkships of 3rd year as compared to the students receiving basic sciences training.^[12] A good number of researches have been done to assess the ethical and moral behavior during internship/clerkship in health care

centers. By observing the academic and professional practices, studies have shown various academic fraudulence by students from proxies of attendance to cheating in examinations and persuading teachers by illegal methods to obtain high scores. To eradicate such misconducts from academic and professional settings, Accreditation Council for Graduate Medical Education has encouraged the inclusion of professionalism in the education of trainees.^[13]

In the present study, majority of students agreed for maintaining the basic ethical principles for protecting the dignity, rights, safety, and well-being of patients. During their training period (both theory and bedside clinics) four basic ethical principles; namely respect for persons (autonomy), beneficence, non-maleficence, and justice have been discussed thoroughly. Most of the responses were in accordance to the rest of the national and international studies.^[14,15] Some of the important issues have been observed in the present study. In the present study majority (56%) of students felt it is better to use generic name rather than brand name during giving prescription to patients and 16% of them don't have any opinion. The response rate for using generic name was increased to 76% after clinical exposure. The reason may be during bedside rounds they see generic prescription and during lectures it was mentioned that as per MCI regulation every physician should prescribe drugs with generic names legibly and preferably in capital letters and he/she shall ensure that there is a rational prescription and use of drugs (the Gazette of India on 08.10.2016).^[16] Similar results have been reported by other studies from India.^[8,17]

Students often expressed contradictory views in different areas of ethical issues e.g. while dealing with treatment of patients, most students (76%) agreed to adhering to "patient's wishes", on the other hand half (50%) of the students felt that "doctor should do what is best" irrespective of patients opinion. Chatterjee *et al.*, in his studies from Kolkata published similar results with 54% and 64.3%, respectively.^[8] In Another study conducted in Chennai, 87% of physicians reported they consider patients opinion before taking any major treatment decisions however 81% of them reported they do best for patients' irrespective of their opinion.^[17] Study in Karnataka reported around 62% of respondents would always adhere to patients wishes in the course of treatment.^[18]

Only 10% of students strongly disagreed and 18% disagreed if law allows abortion doctors must not refuse to do abortion similar to a study conducted by Subramanian *et al.* which reported only 15% of physicians disagreed.^[17] In another study from Northeast India, Manipur 60% of doctors disagreed with the statement doctors must not refuse to do abortion when the law allows.^[19] Similarly another multi-centric study conducted among doctors and nurses from North India reported 63% of them reported doctors can refuse to do abortions.^[20] This could be due to students in our study is from purely pre-clinical students and they are probably not sure about the rights of a doctor as 34% of them marked to neutral response.

A statement on autonomy 'Consent required only in case of operations and not for tests and medications' was disagreed by 78% (strongly disagreed by 40% and disagreed by 38%). Thus, about one-fifth (20%) of the students either do not feel the need of consent for tests and medications or not sure about the issue. After formal training, the figure increased up to 88%. Similar responses have observed in many studies globally.^[3,21]

Bioethics or medical ethics has to be taught by a specialist in medical ethics. Although in the new CBME programme MCI has given very much importance regarding implementation of knowledge of bioethics in first year medical students however, majority of classes were taken by faculties from the forensic and community medicine, and they mostly focus on medical jurisprudence.^[22]

Currently, in our institute, the undergraduate medical students are exposed to medical ethics topics only during clinical postings and are mostly given time for self-study on medical ethics. Various medical boards from different corners of the world agree that medical ethics should be a part of the curriculum for undergraduate medical students. The medical students should be provided with regular classes, various training programs, seminars and workshops, so that the passing out doctors can follow ethical principles in the community and address the ethical dilemmas they encounter with confidence.

The study findings indicate that a gap exists in knowledge about the importance of bioethics among undergraduate students. Contradictory views in different areas of ethical issues like dealing with consent form, law of abortions and using generic versus branded drugs were found to exist. The students attained knowledge of medical ethics from various sources, yet it requires further reinforcement in the undergraduate medical curriculum.

Limitation

This study has the limitation that it does not cover a wider range of undergraduate students, as well as the fact that it is only descriptive in nature. The sample size of this study was limited due to the number of students in the college. It may not represent the national scenario. All the principles of biomedical ethics have not been explored to the same extent. As the sample size was small, no comparisons were planned between the groups and statistical tests were not used.

Conclusion

This study findings indicate a gap exist in knowledge about the importance of bioethics among undergraduate students. Contradictory views in different areas of ethical issues like dealing with consent form, law of abortions, and using generic versus branded drugs exist. The fact that many respondents had neutral opinion to some questions may indicate their lack of awareness or knowledge in that area and their inability to decide although most of them got cleared after basic training. Hence there should be sufficient training classes, workshops, conferences to stress

the importance of ethical practice and to make the students confident enough to deal with the ethical dilemma.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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