

# Innovations

## Knowledge Regarding Bioethics among Medical Students of 2019 Batch and 2018 Batch in a Tertiary Care Hospital in Kochi, Central Kerala, India : A Cross Sectional Study

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### Abstract

**Background:** From time to time, there are ethical concerns in the participation of humans in medical research. Unethical behaviour of medical students, doctors and nurses with patients as well as colleagues have been reported in the past [1]. This may be partly due to a lack of practical ethical guidance during the MBBS Curriculum. Recently in India, as the medical profession has been brought under “Consumer Protection Act” [2], there have been increasing complaints of poor ethical conduct against doctors. Future doctors and medical students must be provided with excellent scientific knowledge and they must understand how human values are embedded in clinical decision making. New MBBS curriculum was introduced by National Medical Commission of India (NMC) from 2019 batch onwards which included a training in Bioethics. Till 2018 batch, bioethics was not included in the MBBS curriculum in India. Since MBBS course of 2019 batch is going to be over, our study would enable us to know the prevailing knowledge regarding Bioethics after new MBBS Curriculum and compare the knowledge regarding Bioethics with 2018 batch MBBS students. This will help us to plan appropriate measures for improving our teaching methods regarding the same in future. **Materials and Methods:** This study was conducted among the MBBS students of the 2018 and 2019 batch of Amrita School of Medicine, AIMS, Kochi, Kerala, India over a period of 2 months. All participants gave their written informed consent to participate in the study, that was approved by the Institutional Ethics Committee. The study tool was a pretested self administered questionnaire. Analysis was done using IBM SPSS statistics 20. **Result:** Mean bioethics knowledge score for 2018 batch was 117.11 +/- 6.136 and for 2019 batch was 121.86 +/- 8.230. Score was higher for the 2019 batch with p value 0.002, which is statistically

significant. **Conclusion:** *The students of the 2019 batch showed a greater knowledge of bioethics than the 2018 batch. This can be because of the introduction of a new curriculum emphasizing the study of bioethics and soft skills introduced in the medical education system from the 2019 batch onwards.*

**Keywords:** *Bioethics, Medical Students, MBBS curriculum , knowledge*

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## **Introduction**

Bioethics is a practical discipline that provides a structured approach for identifying, analyzing, and resolving ethical issues in clinical medicine.[3].Doctors today have to face many ethical dilemmas in their day to day practice. The major 10 ethical issues as perceived by the participants were:

- (1) Patients' Rights
- (2) Equity of resource distribution
- (3) Confidentiality of patients
- (4) Patient Safety
- (5) Conflict of Interests
- (6) Ethics of privatization
- (7) Informed Consent
- (8) Dealing with the opposite sex
- (9) Beginning and end of life
- (10) Healthcare Team Ethics.

Since medical practice has been brought directly under the Consumer Protection Act (1986), it has become a matter of utmost importance for doctors to have a good knowledge regarding bioethics. In recent years, we see a rising trend of doctors being taken to court for unethical practices. This may be partly due to a lack of practical ethical guidance during the MBBS Curriculum and increased public awareness about the Consumer Protection Act. Inappropriate practices by the doctors and increased public awareness may be a reason for this .After graduating from medical college, there will be sudden exposure to various challenges and at that time there will be difficulty to make decisions. To solve medical problems, clinical knowledge alone is not sufficient. A case of medical negligence can be filed against a doctor due to lack of knowledge regarding bioethics. A doctor who holds himself out as ready to give medical advice or treatment implies that he is possessed of skill and knowledge for the purpose. Such a person owes the patient certain duties, namely, a duty of care in deciding whether to undertake the case; a duty of care in deciding what treatment to give; and a duty of care in his administration of that treatment. A breach of any of these duties will support an action for negligence by the patient. [5].An aggrieved person can approach the

consumer courts to file a civil case against the accused person and the hospital and claim damages for medical negligence. Any matter in medical negligence on the part of the service provider will be considered as deficiency under section 42(11) of the new Consumer Protection Act, 2019. They can also file a criminal case. They will have to first file a complaint with the local police authority against the concerned person/persons. If no action is taken, the aggrieved party can file a criminal complaint under Criminal Procedure Code, 1973. [6]. Patients are more inclined to consult those doctors who are experts in that particular speciality, who are well aware of patients needs and values, who are able to hear, understand and empathise their concerns. Future doctors and medical students should be provided with excellent scientific knowledge and they must understand how human values are embedded in clinical decision making. It will be easier to mould the younger generation than trying to change the older generation. There are several studies stressing the importance of incorporating ethical and legal issues into medical curriculum some of which are Mahajan et al, Waghamare et al, SelvakumarDakshanamurthy and Koehler et al. The current MBBS curriculum( from 2019 onwards) includes topics from bioethics. 40 hours is allotted to teach Professionalism and Ethics and 34 hours for AETCOM (Attitude Ethics Communication) during the Foundation Course of Phase 1. In the subsequent years of MBBS curriculum, 37 hours is allotted for AETCOM as Phase 2. For Phase 3 of AETCOM, 25 hours is allotted as Part 1 and 44 hours as part 2. This equips them in making informed decisions regarding treatment and to cultivate good professional relationships with patients.

### **Aim**

To assess the knowledge regarding bioethics among medical students of 2019 Batch and 2018 Batch in a tertiary care hospital in Kochi, Central Kerala, India

### **Materials and Methods**

This was a cross sectional study conducted among the MBBS students of 2018 and 2019 batches of a tertiary care hospital in Kerala, India. The questionnaire was validated through pilot study and administered to the student via various social media platforms. The questionnaire consisted of two parts. Part 1 collected information regarding the socio demographic data and Part 11 collected information regarding their knowledge of medical law, record keeping, ethics, informed consent and medical negligence. The ethical clearance was obtained from the Institutional Review Board (IEC). Informed consent was obtained from all the participants. Data was collected for a period of 2 months. Results were analyzed using IBM SPSS 20 software.

### **Inclusion Criteria**

Medical students of 2019 batch and 2018 Batch

### **Exclusion Criteria**

Medical students of 2019 batch) and 2018 Batch from other medical colleges will be excluded from the study.

### **Discusson**

Most of the participants of the present study were healthy female students of the age group 18-22. Students from the 2018 and 2019 MBBS batches took part in this study. 95.8% of the respondents said that they had attended training in bioethics other than from the institute and 4.2% had not. 94.8% of the respondents answered that they thought a good researcher must have training in bioethics. 5.2% were not sure about their answer. 32.3% of the respondents answered that their Source of knowledge of Bioethics was lectures in the department. 15.6% said their source was books, 17.7% said their source was conferences, workshops and symposia 58.3% answered all of the above and 7.3% said none of the above. 89.9% of the respondents said they believed that undergraduate and postgraduate students must be up to date on bioethics while 8.3% were not sure and 2.1% answered no. 93.8% of the respondents said that a hospital is legally bound to maintain records while 5.2% were not sure. 59.4% of the students answered that a patient's records are their property while 33.3% were not sure and 7.3% answered no. 84.4% of the respondents answered that you have to keep records of a patient in a medicolegal case until the case is judged, 10.4% said you have to keep them for 10 years, 7.3% said 3 years and 2.1% answered 2 years. 80.2% of the respondents answered that informed consent is required only for operations and not for tests and procedures, while 10.4% were not sure and 9.4% answered that informed consent is required.

96.9% of the respondents answered that age and mental status should be taken into account when consent is given, while 2.1% were not sure and 1% answered no.

86.5% of the respondents agreed that children should not be treated without the consent of the parents while 6.3% were not sure and 7.2% answered no.

70.8% of the respondents answered that doctors and nurses should not refuse treatment of violent patients while 16.7% answered that they can while the rest were not sure.

81.3% of the respondents said that carelessly leaving objects in the operation site is a punishable offence.

17.7% were not sure and 1% answered no.

79.2% of the respondents said that not attending to a patient in an emergency is a punishable act. 15.6%

were not sure and 5.2% answered no.

70.8% of the respondents said that refusing treatment to an HIV positive patient is punishable by law.

20.8% were not sure and 8.3% said that it was not punishable.

33.3% of the respondents said medical negligence is tried under criminal law, 27.1% said it is a civil offence, 24% said it comes under the Consumer Protection Act and the rest answered all of the above.

63.5% of the respondents answered that the surgeon would be held responsible if a nurse misplaced a gauze piece at a surgical site that was then sutured up. 42.7% answered that the nurse would be responsible, 17.7% answered that the hospital administrators would be responsible and the rest said the resident would be responsible.

39.6% of the respondents answered that passive euthanasia is legal in India,

30.2% were not sure and 30.2%

answered no.

27.1% of the respondents answered that a case is judged in a consumer court if a doctor causes the death of a patient due to medical negligence. 42.7% were not sure about their answer and the rest answered no.

95.8% of the respondents said that organ transplantation is legal in India. 4.2% were not sure about their answer.

30.2% of the respondents answered that according to the organ transplantation act,organs can be transplanted by blood relatives. 15.6% said it can be done

by a spouse. 2.1% said it can be done by a cadaver. 70.8% answered all of the above.

28.1% of the respondents answered that epistemology meant theory of knowledge. 68.8% were not sure about the answer. 3.1% did not know the answer.

39.6% of the respondents were aware of biobanking. 33.3 % were not aware of biobanking. 27.1% were not sure about their answer.

93.8% of the respondents were aware of stem cell therapy. 4.2% were not aware of stem cell therapy.

2.1% were not sure about their answer.

36.5% of the respondents answered that research on stem cells require approval from Institutional Human Ethics Committee (IHEC) 20.8% of the respondents answered that research on stem cells require approval from the Institutional Biosafety Committee (IBSC). 7.3% of the respondents answered that research on stem cells requires approval from the Institutional Animal Ethics Committee (IAEC). 57.3% answered all of the above. 2.1 % answered none of the above.

78.1% of the respondents answered that it is mentally challenged individuals who are vulnerable in research. 54.2% of the respondents answered that it is children who are vulnerable in research. 53.1% of the respondents answered that it is pregnant women who are vulnerable in research. 29.2% of the respondents answered that it is prisoners who are vulnerable in research.

50% of the respondents answered that they prefer to consult IEC if there is an ethical problem.

35.4% of the respondents answered that they prefer to consult Hospital administration if there is an ethical problem. 19.8% of the respondents answered that they prefer to consult HOD if there is an ethical problem. 14.6% of the respondents answered that they prefer to consult Colleague if there is an ethical problem. 2.1% answered none of the above.

44.8% of the respondents answered that they were aware about the Institutional ethics committee (IEC) in our Institute. 33.3 % were not aware and 21.9% were not sure about their answer.

52.1% of the respondents answered that they were aware of the Bioethics committee in our Institute.

30.2% were not aware and 17.7% were not sure about their answer.

34.4% of the respondents answered that our institute has separate committees for reviewing animal and human research projects. 2.1% did not agree and 63.5% were not sure about their answer.

83.3% of the respondents answered that there is a relationship between Bioethics and public health issues. 1% did not agree and 15.6% were not sure about their answer.

9.4% of the respondents answered that Ethical conduct is important only for avoiding legal action. 72.9% did not agree and 17.7% were not sure about their answer.

**Table 1: Comparison of knowledge of bioethics between 2018 and 2019 batches**

Batch	N	Mean	Standard	P value
2018	37	117.11	6.136	0.002
2019	59	121.86	8.230	

Mean bioethics knowledge score for 2018 batch was 117.11+/- 6.136 and for 2019 batch was 121.86+/-8.230. Score was higher for the 2019 batch with P value 0.002, which is statistically significant. This is because of the incorporation of the study of bioethics into their curriculum.

### **Conclusion**

The aim of the study was to assess the knowledge regarding bioethics among medical students of 2019 Batch and 2018 Batch in a tertiary care hospital in Kochi, Central Kerala, India.

The results showed a greater knowledge of bioethics among the 2019 batch students than the 2018 batch students. This means that the 2019 batch will be able to sort out ethical dilemmas that may arise during the course of their practice. In conclusion, the revision of the MBBS curriculum by the NMC from 2019 succeeds in creating more well rounded doctors who can provide better service.

### **Limitations**

Only people with access to smartphones or computers and internet facilities could access the forms as they were distributed via social media platforms. Only people who knew English could respond to the form. Since these self-administered questionnaires were circulated through social media, the response rate could not be calculated.

### **References**

1. Green MJ, Farber NJ, Ubel PA, Mauger DT, Aboff BM, et al. (2000) Lying To each other: when internal medicine residents use deception with their colleagues. *Arch Intern Med* 160: 2317-2323.
2. *The Consumer Protection Act (1986)*.
3. *Systematic reviews of empirical bioethics*. Strech D, Synofzik M, Marckmann G *J Med Ethics*. 2008 Jun;34(6):472-7.
4. Alkabba AF, Hussein GM, Albar AA, Bahnassy AA, Qadi M. The major medical ethical challenges facing the public and healthcare providers in Saudi Arabia. *J Family Community Med*. 2012;19(1):1-6.
5. (2010) 3 SCC 480 *Sharma v Batra Hospital and Medical Research Centre (2010) 3 SCC 480, the duty of care which is required. National Consumer Disputes Redressal*
6. *Medical Negligence in India Priya Adlakha and NihitNagpal SS Rana and Co. Advocates*
7. Mattick K, Bligh J (2006) *Teaching and assessing medical ethics: where are we now? J Med Ethics* 32: 181-185.

8. *Angelos P, Lafreniere R, Murphy TF, Rosen W (2003) Ethical issues in surgical treatment and research. CurrProblSurg 40: 353-448.*
9. *Mahajan R, Aruldhas BW, Sharma M, Badyal DK, Singh T. Professionalism and ethics: A proposed curriculum for undergraduates. Int J Appl Basic Med Res. 2016;6(3):157-163.*
10. *Jwalant Waghmare et al. Designing ethics curriculum for medical graduates Journal of Education Technology in Health Sciences, September-December, 2016;3(3): 95-100*
11. *Dakshnamurthy, Selvakumar& Joseph, L. (2004). The Importance of Including Bio-Medical Ethics in the Curriculum of Health Education Institutes. Education for health (Abingdon, England). 17. 93-6.*
12. *Koehler, Nicole &Mcmenamin, Christine. (2012). How relevant is undergraduate medical law teaching to clinical practice? A graduates' perspective. Journal of law and medicine. 20. 380-90.*