

SHORT ARTICLE

Knowledge and attitude of medical students towards bioethics- A cross sectional study from a medical college in northern Tamil Nadu

Aravind Manoharan¹, Madhusudan M Iyengar², AY Nirupama³, Kankanal Nithya⁴

¹Associate Professor, Department of Community Medicine, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education (CARE), Chengalpattu District, Tamil Nadu; ²Scientist 'D' (Medical), ICMR-National Centre for Disease Informatics and Research, Bengaluru rural district, Karnataka; ³Lecturer, Indian Institute of Public Health, Madhapur, Telangana; ⁴Undergraduate student, Department of Community Medicine, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education (CARE), Chengalpattu District, Tamil Nadu

Abstract	Introduction	Methodology	Results	Conclusion	References	Citation	Tables / Figures
--------------------------	------------------------------	-----------------------------	-------------------------	----------------------------	----------------------------	--------------------------	----------------------------------

Corresponding Author

Dr Madhusudan M, Scientist 'D' (Medical), ICMR-National Centre for Disease Informatics and Research, Nirmal Bhawan, Poojanhalli Road, Kannamangala P.O, Devanahalli Taluk, Bengaluru rural district, 562110
E Mail ID: madhusudan_kims12@rediffmail.com



Citation

Manoharan A, Madhusudan M, Nirupama AY, Nithya K. Knowledge and attitude of medical students towards bioethics- A cross sectional study from a medical college in northern Tamil Nadu. Indian J Comm Health. 2021;33(3):534-538. <https://doi.org/10.47203/IJCH.2021.v33i03.024>

Source of Funding: Nil Conflict of Interest: None declared

Article Cycle

Received: 21/05/2021; Revision: 12/08/2021; Accepted: 19/09/2021; Published: 30/09/2021

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Abstract

Studies have shown that a significant proportion of healthcare professionals were unaware of the universally recognized bioethical principles. The study was conducted to assess the knowledge and attitude towards bioethics among undergraduate medical students of a Medical College and also to find out the association of knowledge and attitude towards bioethics with other factors. This was a Cross Sectional study conducted at a medical college of Chengalpattu district between April to September of 2019. Study participants included medical undergraduate students from second academic year to fourth academic year of the medical college who had clinical exposure. Data was collected from a total of 224 subjects using a pretested, self-administered questionnaire. 89.3% of the respondents had poor knowledge about medical ethics. The prevalence of good+excellent knowledge about bioethics was highest among 17-19 years age group (95.8%) and least among >22 (60%) years age group, highest among those with <12 months of clinical exposure (100%) and least among those with 25-36 months of exposure (57.8%) and both these associations were found to be statistically significant by Chi square test. (P= 0.048 and <0.001 respectively). Majority of the subjects (>58%) had a favourable attitude towards the correct ethical practices with respect to most of the issues (11/15). However, majority of them (>53.1%) also had a favorable attitude towards certain issues (4/15) which are debatable. The most preferred sources for learning about medical ethics were seminars (81.7%), clinical discussions (78.1%) and lectures (57.1%). Majority of the subjects had poor knowledge about bioethics. The knowledge was better among students of earlier years of course compared to those in the later part. Majority of the subjects had a favorable attitude towards the correct ethical practices in most of the cases. The most preferred sources for learning about medical ethics were seminars, clinical discussions and lectures

Keywords

Bioethics; Chengalpattu; Cross-sectional study; Medical students

Introduction

Ethics is the study of morality – careful and systematic analysis of moral decisions and behaviors and practicing those decisions. Bioethics is concerned with moral values and judgment as it applies to medicine.(1,2) Medical practice has become increasingly commercialized and ethics has taken a backseat in most parts of the world. Ethics teaching has been shown to have a significant

influence on the professionalism and moral qualities of medical professionals.(3) Patients' needs cannot be fulfilled with just clinical knowledge because of increasing public awareness on bioethics and the physicians are expected to give comprehensive and compassionate services to the community.(4)

Teaching bioethical issues in classrooms will not serve the purpose unless ethics in real life situations is actively

observed, discussed and practiced during the training of medical students. Students learn the science of physical examination and procedures during their training, but are seldom taught the art part-empathy and humanity. It is necessary to provide the budding medical professionals the scientific knowledge along with basic morals in patient relationship to understand best human value in clinical diagnosis.(5) There are evidences through studies that significant proportion of healthcare professionals were unaware of the universally recognized bioethical principles such as Hippocratic oath, Nuremberg code and declaration of Helsinki which are essential part of clinical practice.(6,7) It is important to gather baseline information on ethics awareness from different batches of students to guide the evaluation of the current ethics curriculum along with its teaching methodology.(8) It is also important to understand their attitude towards bioethics before imparting them the curriculum.

Aims & Objectives

1. To assess the knowledge and attitude towards bioethics among undergraduate medical students
2. To find out the association of knowledge and attitude towards bioethics with other factors.

Material & Methods

A Cross Sectional study was conducted at a private Medical College hospital of Chengalpattu district, Tamil Nadu from April to September of 2019. Study participants included medical undergraduate students from second academic year to fourth academic year of the college who had clinical exposure. A sample size of 224 was arrived at taking prevalence as 15.2%, permissible error as 5% within 95% confidence limits and a non-response rate of 10%.(4) Stratified random sampling was done for choosing the study participants [Figure 01]. 76 students were included from second academic year of MBBS which was further divided into 38 males and 38 females. 74 participants each were included from the 3rd and 4th year which was further divided into 37 males and 37 females each. Attendance of every batch was used to identify the study participants. Each participant was selected by generating random numbers using the roll numbers as reference.

The data was collected after explaining the purpose and procedure of the study. The data collection was done in batches without interfering with the academic sessions. A pretested, self-administered questionnaire was used to assess perception and attitude towards bioethics. It comprises of three sections namely; (1) demographic details of the participants including age, sex, academic year, months of clinical exposure and parent's occupation and education, (2) questions to assess the knowledge on bioethics including awareness regarding Institutional Human Ethics Committee, Hippocratic oath, sources of information regarding bioethics, preference in consulting professionals during ethical issues (a total of 14 questions were evaluated with 0 marks awarded for an incorrect

response and 1 mark for a correct response), and (3) questions on attitude towards bioethics which was assessed using three point Likert's scale- Agree, neutral and disagree.

Data collected was entered in Microsoft Excel and statistical analysis was done using SPSS version 21- software. The data was expressed in proportions and Chi Square test was used to test association.

The study was initiated after getting ethical approval from Institutional Human Ethics Committee. Written informed consent was taken from subjects before administrating the questionnaire. The confidentiality of collected data was maintained throughout the study.

Results

Data collected from 224 participants was analyzed. The sample was matched for gender and year of study but not for years of clinical exposure (unmatched representation from the regular and supplementary batches). Age of the participants ranged from 19-22 years with a mean (SD) age of 20.95(1.23) years. Knowledge assessment showed a mean score of 5.04 (SD: 1.91). Minimum score was 0 and maximum was 14 with only 10.7% of the participants scoring more than 50%. The prevalence of good+excellent knowledge about bioethics was highest among 17-19 years age group (95.8%) and least among >22 years age group (60%), highest among those with <12 months of clinical exposure (100%) and least among those with 25-36 months of exposure (57.8%), highest among those whose fathers were educated upto postgraduate level and above (80.7%) and least among those whose fathers were educated upto higher secondary level (66.6), highest among those whose mothers were educated upto higher secondary level (82.3%) and least among those whose mothers were educated upto secondary level (68.8%). However, only age and duration of clinical exposure in months were found to have a statistically significant association by Pearson Chi square test. (P= 0.048 and <0.001 respectively) [Table 1]

Majority of the respondents had a favorable attitude with respect to components like taking informed consent of a person before drawing blood for complete blood count (93.3%), disclosure of a patient's HIV status to his wife (71%), close relatives or spouse being told about patient's condition (66.1%), the doctor doing what is best for the patient irrespective of the patient's opinion (64.3%), altruism in medical practice (58%), the care of the patient being doctor's first concern (76.8%), doctors decisions being final in the event of a disagreement between patients or families and healthcare professionals about treatment decisions (69.2%), disclosing to family members that one of the reasons the patient had an ADR was because of the healthcare personnel forgetting to check the expiry date before administration (66.5%), doing a surgery with consent from a patient with amnesia, who is not able to remember his family and friends

(65.2%) and doctors performing abortion if the laws allows it (69.6%). However, they also had a favourable attitude towards certain components like going on with a treatment when there is 50% chance of success and 50% chance of further impairment due to treatment (83.5%), legalizing euthanasia (53.6%), TV commercials advertising medical care in a hospital (60.3%), pre-payment at hospitals before an expensive treatment (53.1%) which are debatable. [Table 2]

The most preferred sources for learning about medical ethics were seminars (81.7%), clinical discussions (78.1%) and lectures (57.1%) [Figure 2].

Discussion

In the current study 89.3% of the study participants had poor knowledge about bioethics. In contrast, Hariharan et.al in their study have observed that, a little more than half of both physicians and nurses had "no" or 'little' knowledge pertaining to law and ethics. This difference could be due to differences in the type of study subjects. (7)

The prevalence of good+excellent knowledge about bioethics was highest among 17-19 years age group (95.8%) and least among >22 years age group (60%), highest among those with <12 months of clinical exposure (100%) and least among those with 25-36 months of exposure (57.8%), and both age and duration of clinical exposure in months were found to have a statistically significant association with knowledge of bioethics. The probable reason for this better knowledge among students of earlier years of graduation could be they would have been oriented towards bioethics during their induction program/foundation course during first year. Some might also have undertaken STS projects during the Phase II. Janakiram et al., have also observed that the seniority of the students did not make any significant difference with respect to their knowledge of ethics. (8)

Majority of the respondents had a favorable attitude with respect to components like taking informed consent of a person before drawing blood for complete blood count (93.3%), disclosure of a patient's HIV status to his wife (71%), close relatives or spouse being told about patient's condition (66.1%), the doctor doing what is best for the patient irrespective of the patient's opinion (64.3%), altruism in medical practice (58%), the care of the patient being doctor's first concern (76.8%), doctors decisions being final in the event of a disagreement between patients or families and healthcare professionals about treatment decisions (69.2%), disclosing to family members that one of the reasons the patient had an ADR was because of the healthcare personnel forgetting to check the expiry date before administration (66.5%), doing a surgery with consent from a patient with amnesia, who is not able to remember his family and friends (65.2%) and doctors performing abortion if the laws allows it (69.6%). However, they also had a favourable

attitude towards certain components like going on with a treatment when there is 50% chance of success & 50% chance of further impairment due to treatment (83.5%), legalizing euthanasia (53.6%), TV commercials advertising medical care in a hospital (60.3%), pre-payment at hospitals before an expensive treatment (53.1%) which are debatable. Iswarya S et al., have also reported that majority of their subjects agreed to components 1, 7, 8, 11, 13, 15.(9) Janakiram et al., have reported that majority of the medical and dental students agreed to components 1, 8, 13.(8) Acharya et al., have reported that majority of their subjects agreed to components 1 and 13, but however were divided in their opinion pertaining to component 8.(10)

The most preferred sources for learning about medical ethics [Figure 2] were seminars (81.7%), clinical discussions (78.1%) and lectures (57.1%). Acharya et al., and Chatterjee et al., have also reported similar findings (i.e., most common source of knowledge on ethics among their subjects was lectures/seminars (35.7%) followed by experience at work (24.5%), in the former study and lectures (54.7%) followed by books (47.8%) in the latter study).(10,11)

Conclusion

Majority of the subjects had had poor knowledge about bioethics. The knowledge was better among students of earlier years of course compared to those in the later part. Majority of the subjects had a favourable attitude towards the correct ethical practices in most of the cases. However, majority of them also had a favourable attitude towards certain components like going on with a treatment when there is only 50% chance of success, legalizing euthanasia, TV commercials advertising medical care in a hospital, pre-payment at hospitals before an expensive treatment which are debatable. The most preferred sources for learning about medical ethics were seminars, clinical discussions and lectures.

Limitation of the study

The limitation of the study is that the findings are based on Medical students of a single college. Hence it cannot be generalized to the entire state or country

Authors Contribution

AM: Conceptualization, Data Analysis, Preparation of manuscript. MM: Analysis, Preparation of manuscript, critical review. NAY: Data Collection, Data Entry, Preparation of manuscript. KN: Data collection, Data Entry

Acknowledgement

The authors would like to sincerely acknowledge the support provided by Professor and head, Department of Community Medicine and Management of the CHRI in conducting the study and also UG medical students of CHRI for their cooperation

References

- Baldwin DC, Dughtery SR, Rowley BD. Unethical and Unprofessional conduct observed by residents during their first year of training. Acad Med 1998;73:1195-200.
- Code of Medical Ethics Regulations, 2002. New Delhi: Medical Council of India. | MCI India [Internet]. c2019 -[cited 2019 Jan 15]. Available from: <https://www.mciindia.org/CMS/rules-regulations/code-of-medical-ethics-regulations-2002>
- Roberts LW, Green Hammond KA, Geppert GM, Warner TD. The positive role of professionalism and ethics training in medical education: a comparison of medical student and resident perspectives. Acad Psychiatry 2004; 28(3):170-82.
- Karthikeyan K, Kanagaraj D, Karthikeyan V, Devandiran S. Knowledge, attitude, and practice of health-care ethics among doctors in Tamil Nadu – A crosssectional study. Int J Med Sci Public Health 2020;9(5):305-309.
- Kalantri S. Ethics in medical education. Ind J Anaes 2003;47(6):435–6.
- Adhikari S, Paudel K, Aro AR, Adhikari TB, Adhikari B, Mishra SR. Knowledge, attitude and practice of healthcare ethics among resident doctors and ward nurses from a resource poor setting, Nepal. BMC med ethics 2016;17(1):68.
- Hariharan S, Jonnalagadda R, Walrond E, Moseley H. Knowledge, attitudes and practice of healthcare ethics and law among doctors and nurses in Barbados. BMC med ethics 2006;7(7):1-9
- Janakiram C, Gardens SJ. Knowledge, attitudes and practices related to healthcare ethics among medical and dental postgraduate students in south India. Ind J Med Ethics 2014; 11(2): 99-104.
- Iswarya S, Bhuvaneshwari S. Knowledge and attitude related to medical ethics among medical students. Int J Comm Med Public Health 2018;5(6):2222-5
- Aacharya RP, Shakya YL. Knowledge, attitude and practice of medical ethics among medical intern students in a Medical College in Kathmandu. Bangl J Bioethics 2015; 6(3):1-9.
- Chatterjee B, Sarkar J. Awareness of medical ethics among undergraduates in a West Bengal medical college. Ind J Med Ethics 2012;9(2):93-100.

Tables

TABLE 1 ASSOCIATION OF KNOWLEDGE SCORES WITH DEMOGRAPHIC FACTORS

Variables		Knowledge about bioethics				Total	P Value
		Poor	Average	Good	Excellent		
Age in years	17-19	0(0)	1(4.2)	12(50)	11(45.8)	24(100)	0.048
	20-22	4(2.4)	37(21.8)	60(35.3)	69(40.6)	170(100)	
	>22	0(0)	12(40)	6(20)	12(40)	30(100)	
Clinical exposure in months	<12	0(0)	0(0)	1(20)	4(80)	5(100)	0.000
	12-24	1(0.8)	14(11)	55(43.3)	57(44.9)	127(100)	
	25-36	3(4.2)	27(38)	18(25.4)	23(32.4)	71(100)	
	>36	0(0)	8(42.1)	3(15.8)	8(42.1)	19(100)	
Father’s education	Secondary	0(0)	1(25)	0(0)	3(75)	4(100)	0.734
	Higher Secondary	0(0)	2(33.3)	2(33.3)	2(33.3)	6(100)	
	Diploma	0(0)	2(28.6)	2(28.6)	3(42.9)	7(100)	
	graduate	3(3.2)	24(25.8)	30(32.3)	36(38.7)	93(100)	
	postgraduate	1(0.9)	21(18.4)	44(38.6)	48(42.1)	114(100)	
Mother’s education	Secondary	0(0)	5(31.3)	4(25)	7(43.8)	16(100)	0.369
	Higher Secondary	0(0)	3(17.6)	3(17.6)	11(64.7)	17(100)	
	Diploma	0(0)	1(25)	0(0)	3(75)	4(100)	
	graduate	2(1.7)	24(20.9)	49(42.6)	40(34.8)	115(100)	
	postgraduate	2(2.8)	17(23.6)	22(30.6)	31(43.1)	72(100)	

TABLE 2 ATTITUDE TOWARDS BIOETHICS

Sl No.	Attitude component	Agree (%)	Neither agree nor disagree (%)	Disagree (%)
1.	Taking informed consent of a person before drawing blood for complete blood count	209(93.3)	8(3.6)	7(3.1)
2.	Going on with a treatment when there is 50% chance of success & 50% chance of further impairment due to treatment	187(83.5)	19(8.5)	18(8.0)
3.	Disclosure of a patient’s HIV status to his wife	159(71.0)	37(16.5)	28(12.5)
4.	Legalizing euthanasia	120(53.6)	61(27.2)	43(19.2)
5.	A TV commercial advertising medical care in a hospital	135(60.3)	60(26.8)	29(12.9)
6.	Pre-payment at hospitals before an expensive treatment	119(53.1)	65(29.0)	40(17.9)
7.	Close relatives or spouse should be told about patient’s condition	148(66.1)	50(22.3)	26(11.6)
8.	The doctor should do what is best for the patient irrespective of the patient’s opinion	144(64.3)	50(22.3)	30(13.4)
9.	Altruism in medical practice	130(58.0)	71(31.7)	23(10.3)
10.	The care of the patient is your first concern	172(76.8)	39(17.4)	13(5.8)
11.	Children should not be treated without consent of their parents	160(71.4)	42(18.8)	22(9.8)
12.	If there is a disagreement between patients or families and healthcare professionals about treatment decisions, doctors decisions should be final	155(69.2)	44(19.6)	25(11.2)

13.	Disclose to family members that one of the reasons the patient got an ADR was because you forgot to check the expiry date before administration	149(66.5)	51(22.8)	24(10.7)
14.	Doing a surgery with consent from a patient with amnesia, who is not able to remember his family & friends	146(65.2)	43(19.2)	35(15.6)
15.	If law allows abortion, doctors must not refuse to do abortion	156(69.6)	35(15.6)	33(14.7)

Figures

FIGURE 1 SAMPLING METHOD

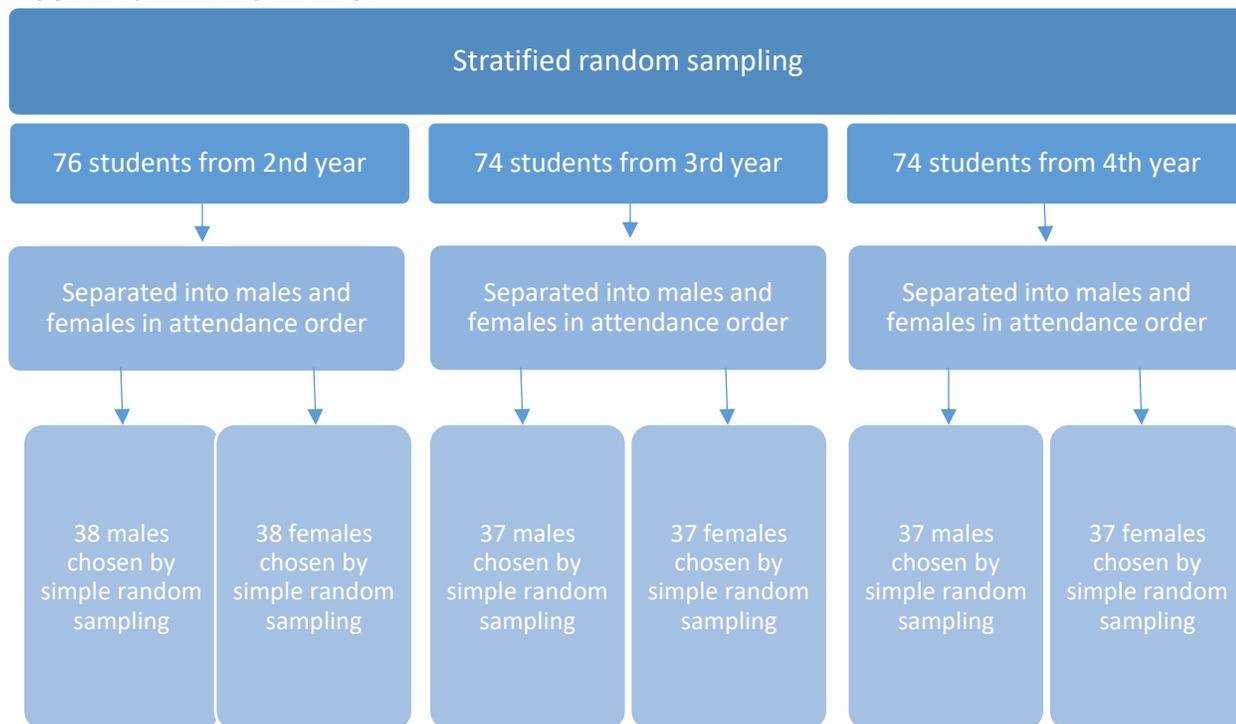


FIGURE 2 PREFERRED SOURCE FOR LEARNING ABOUT MEDICAL ETHICS

