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**Title of the article:** Knowledge and attitude about medical ethics among undergraduate medical students- A cross sectional study

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**Abstract:**

**Background:** Knowledge of ethics will have a significant influence on the professionalism and moral qualities of doctors and also helps them to face ethical issues. The first step in incorporating ethics on a bigger scale in our curriculum will be to determine the level of the basic knowledge and attitudes among medical students. Hence, this study was planned at a medical college among students to evaluate the level of knowledge and attitude about medical ethics among students. **Objectives:** To assess and compare the level of knowledge and attitude about medical ethics among students and interns. **Materials and methods:** A cross sectional questionnaire study was conducted among 147 second year students,104 interns and the questionnaire consisted of 14 questions, five questions on knowledge and nine on attitude domain. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 10 and knowledge comparison between students was done using Chi-square test while the attitude was compared using Man-Whitney U test and p< 0.05 was considered statistically significant. **Results:**77.9% interns, 39% students knew about the basic principles of ethics and 82.9% students, 60.6% interns told that doctors should maintain patient’s confidentiality and there was a significant statistical difference in knowledge and attitude between the students and interns. **Conclusion:** The knowledge and attitude of undergraduate students on medical ethics was found to be satisfactory and the results of this study can be used to further strengthen the medical curriculum and such initiative will helpful in developing ethically competent doctors.

**Keywords:** AETCOM, curriculum, ethics, medical students

**Introduction:**

Medical ethics is a system of moral principles that gives values for health professionals to practice medicine and also guides in the field of scientific research. It is composed of set of four principles which includes, respect for autonomy, non-maleficence, beneficence and justice which forms a basic foundation for all health care professionals (1).It also helps in professional conduct of behavior and guide them when they have to face ethical dilemmas (2). In many instances conflicts arise between patients and doctors which require doctors to be well versed with the ethical principles (3).Medical ethics is an essential part of medical curriculum and every student should have adequate knowledge regarding the same. Our medical education system does not train undergraduate medical students during their undergraduate course so, as a result in the recent times very frequently we have seen an increase in number of assaults among doctors and also there is gradual decline in confidence on doctors among the general public(4).The main aim of medical education is to ensure that every student acquires adequate knowledge, skills in medical subjects but are also trained in ethical and communication aspects to treat patients effectively(5). In 2018, Medical Council of India (MCI) had released AETCOM (Attitude Ethics and Communication) module, which is a useful guide to train undergraduate medical students (6). This landmark step will eventually guide medical colleges in training medical students in various aspects of ethics and professionalism. Many studies done in the past signifies the lack of adequate knowledge about medical ethics among medical students (7), (8) and doctors (9),(10), (11).So teaching ethics in both theoretical and practical aspects for students during their undergraduate training course will have a significant influence on the moral qualities of medical professionals. The first step in incorporating ethics in our medical curriculum will be to determine the level of the basic knowledge and attitudes among medical students. Hence, this study was planned to evaluate the level of knowledge and attitude about medical ethics among undergraduate medical students who are the future doctors of our society.

**Aims and objectives:**

1. To assess the level of knowledge about medical ethics among undergraduate medical students
2. To assess attitude about medical ethics among undergraduate medical students

**Materials and methods:**

A cross sectional study was conducted among second year MBBS students (no.146) and interns (no.104) at a medical college in Hyderabad. Institutional Ethics Committee permission was taken before conducting the study. Oral consent was taken from those who are willing to participate in the study and the objectives of the study was briefly explained to the students before admininistering the questionnaire. A pre validated questionnaire (12) with knowledge and attitude items was used in this study with certain modifications. The questionnaire has 3 sections. The first section of the questionnaire covered demographic information like age and year of study of study participants. The second part of the questionnaire contains questions about their knowledge on medical ethics and its importance and the third part is about their attitudes on various issues such as core values for guidance of doctors and importance of medical ethics in their curriculum which was assessed by 5 point Likerts scale. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 10 and interpretation of data was done using percentage and proportion. For comparing the knowledge among the two groups, Chi-square test was used, Man-Whitney U test was used to compare attitude and p < 0.05 was considered statistically significant.

**Results:**

Out of 150 interns, 104(69.3%) took part in the study and all 146 (100%) second MBBS students participated in the study and the mean age group of interns and second MBBS students was 23.1 years and 19.8 years (Graph 1) and all the participants in this study were females as it is a female dental college. Table 1 describes student’s and interns knowledge on medical ethics. Various sources of acquisition of knowledge on medical ethics among the students and interns is shown in Graph 2. Importance of consent taking is shown in Graph 3. There is a significant statistical difference in knowledge between second MBBS students and interns (p<0.05). Table 2 depicts attitude of students and interns towards medical ethics. Attitude of students and interns on maintain patient s confidentiality is shown in Graph 4. There is a significant statistical difference in attitude among second MBBS students and interns (p<0.05) except for the questions relating to the physicians respect for human life and their duty regarding updating their knowledge and skills.

**Table 1: Knowledge on medical ethics among students and interns**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. no.** | **Knowledge** | **Second MBBS**  **N (%)** | **Interns**  **N (%)** | **p value\*** |
| **1.** | **How important is knowledge and implementation of medical ethics among doctors?**  **Not important** | 0 | 0 | 0.00 |
| **Marginally important** | 8(5.5) | 0 |
| **Very important** | 47(32.2) | 14(13.5) |
| **Must know and follow** | 91(62.3) | 90 (86.5) |
| **2.** | **Sources of your medical ethics knowledge:**  **Lectures /seminars** | 87(59.6) | 48(46.2) | 0.00 |
| **Online sources such as websites, online literature** | 51(34.9) | 25(24) |
| **Media** | 8(5.5) | 21(20.2) |
| **Medical journals** | 0 | 10(9.6) |
| **3.** | **Is there an ethics committee in your institution?**  **Yes** | 56(38) | 97(93.3) | 0.00 |
| **No** | 90(61.6) | 7(6.7) |
| **4.** | **Are you aware of the four basic principles of medical ethics?**  **Yes** | 57(39) | 81(77.9) | 0.00 |
| **No** | 89(60.9) | 23(22.1) |
| **5.** | **Consent should be taken always for**  **(examination, investigation, treatment, procedure)**  **Yes** | 123(84.2) | 101(97.1) | 0.00 |
| **No** | 11(7.5) | 3(2.9) |
| **Don’t know** | 12(8.2) | 0 |

**(\*Chi square test: p value < 0.05 is significant)**

**Table 2: Attitude of undergraduate students towards medical ethics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. no.** | **Attitude** | **Second MBBS**  **N (%)** | **Interns**  **N (%)** | **p value\*** |
| **1.** | **The physician must maintain the utmost respect for human life and the human person**  **Strongly agree** | 121(82.9) | 91(87.5) | .24 |
| **Agree** | 13(8.9) | 12(11.5) |
| **Neutral** | 2(1.4) | 0 |
| **Disagree** | 4(2.7) | 0 |
|  | **Strongly disagree** | 6(4.1) | 1(1) |
| **2.** | **The physician must stay abreast and practice in accordance with current medical knowledge, continually improve his skills and seek help whenever needed**  **Strongly agree** | 107(73.3) | 84(80.8) | .109 |
| **Agree** | 29(19.9) | 20(19.2) |
| **Neutral** | 2(1.4) | 0 |
| **Disagree** | 2(1.4) | 0 |
| **Strongly disagree** | 6(4.1) | 0 |
| **3.** | **The physician should protect the patient's confidentiality and adopt an appropriate manner of communication**  **Strongly agree** | 121(82.9) | 63(60.6) | 0.00 |
| **Agree** | 13(8.9) | 30(28.8) |
| **Neutral** | 4(2.7) | 10(9.6) |
| **Disagree** | 3(2.1) | 0 |
| **Strongly disagree** | 5(3.4) | 1(1) |
| **4.** | **Listening and respecting the patient’s views does not play an important role in the duties of a doctor**  **Strongly agree** | 6(4.1) | 56(53.8) | 0.00 |
| **Agree** | 3(2.1) | 18(17.3) |
| **Neutral** | 10(6.8) | 3(2.9) |
| **Disagree** | 57(39) | 12(11.5) |
| **Strongly disagree** | 70(47.9) | 15(14.4) |
| **5.** | **It is not important to disclose all the information to the patients regarding their treatment**  **Strongly agree** | 11(7.5) | 0 |
| **Agree** | 16(11) | 2(1.9) |  |
| **Neutral** | 51(34.9) | 8(7.7) |
| **Disagree** | 50(34.2) | 25(24) |
| **Strongly disagree** | 18(12.3) | 69(66.3) |
| **6.** | **The doctor cannot be held responsible for the therapy prescribed to the patients**  **Strongly agree** | 9(6.2) | 33(31.7) | 0.00 |
| **Agree** | 13(18.9) | 36(34.6) |
| **Neutral** | 30(20.5) | 18(17.3) |
| **Disagree** | 61(41.8) | 12(11.5) |
| **Strongly disagree** | 33(22.6) | 5(4.8) |
| **7.** | **Medical ethics teaching for medical students is important aspect of medical education**  **Strongly agree** | 83(56.8) | 82(78.8) | 0.00 |
| **Agree** | 45(30.8) | 19(18.3) |
| **Neutral** | 5(3.4) | 2(1.9) |
| **Disagree** | 7(4.8) | 1(1) |
| **Strongly disagree** | 6(4.1) | 0 |
| **8.** | **The teaching of medical ethics will enable me to engage with contemporary ethical issues**  **Strongly agree** | 56(36.3) | 53(51) | 0.00 |
| **Agree** | 57(39) | 46(44.2) |
| **Neutral** | 16(11) | 4(3.8) |
| **Disagree** | 16(11) | 0 |
| **Strongly disagree** | 4(2.7) | 1(1) |
| **9.** | **Medical ethics teaching would neither influence the attitude and behavior of doctors nor improve the patient-doctor relationship**  **Strongly agree** | 11(7.5) | 1(1) | 0.00 |
| **Agree** | 9(6.2) | 2(1.9) |
| **Neutral** | 17(11.6) | 12(11.5) |
| **Disagree** | 56(38.4) | 24(23.1) |
| **Strongly disagree** | 53(36.3) | 65(62.5) |

(\*Mann-Whitney U test: p value <0.05-significant)

**Graph 1: Mean age of medical students and interns**

**Graph 2: Source of medical ethics knowledge among students and interns**

**Graph 3: Knowledge about importance of taking consent among students and interns**

**Graph 4: Attitude of students and interns pertaining to patient's confidentiality**

**Discussion:**

The study shows that the undergraduate students and interns involved in the study have some basic knowledge and good attitude about medical ethics. The main source of students knowledge on medical ethics was through lectures, when compared to similar to study done by Biswajit et al.(12) and

Suja Purushothaman et al. (13) where it was 46.3% and 50% for newspapers. In this study, none of the second year students and only 9.6% of interns quoted medical journals as their source of information on ethics which is very less in comparing to a similar study (13) where it was 17.5% even among the students. Majority of interns (93.3%) knew about the presence of ethics committee at our college when compared to second MBBS students because these interns have undertaking various research projects for which they had taken ethics committee clearance, the result of which in higher in comparison to a similar study by Sunil et al.(14) where the response was 57.7% and similarly most of the interns also knew about the basic principles of medical ethics indicating these future doctors have a basic foundation in ethics which will eventually enable them to tackle ethical issues in the near future. It was good to note that 84.2% students, 97.1% interns agreed that taking consent is a must before examining patients the results of which are less when comparing to a study done by Chetan et al. (15) where it was 92.8% for students and 100% for interns.

Maintaining patient’s confidentiality is very important, which was strongly agreed by 82.6% students, 60.6% interns, while comparing to a study done by Adhikari et al.(5) where it was 92.4% among doctors and this difference in attitude might be due to the fact that attitude improves with practice and age. Teaching ethics to students as a part of the curriculum is very essential, which was strongly agreed by 78.8% of interns as these students were taught only few ethical aspects as a part of forensic medicine during their second professional year. In a study done by Chin et al. (16)students recommended formal ethics teaching and assessment as an important requirement of medical education and also in a similar study by J Goldie et al. (17) showed preliminary ethical training has a positive impact on students potential behavior on facing ethical problems. Also another study done by Burling et al. (18), Keeselheim et al. (19) and Sharma et al. (20) highlighted the importance of incorporating medical ethics and professionalism in medical curriculum. All these studies show that medical ethics must be given a major share in the curriculum for undergraduate medical students. The training module developed by World health organization (WHO) in 2009 in ethics and the AETCOM module by MCI can be used as a referral by the medical colleges in training their students (6,21). Therefore it is very necessary to reemphasize the importance of ethics by adopting new teaching learning methods, interactive workshops, case studies, seminar, role plays, simulated patients, cinemeducation which will help in implementing longitudinal programs that will help students acquire necessary competency in ethics and followed by frequent assessment methods which will facilitate students to improvise themselves. Also certain crucial topics like informed consent, publication ethics, research misconduct, confidentiality must be given special importance.

Patients trust on physician is the major contributing factor for successful prevention, diagnosis, management of diseases and also for a fruitful doctor-patient relationship (22). Integrating good ethical behavior among medical students will help in reinforcing public trust in medical professionals and will eventually make medicine a sacred and valuable profession (23).These efforts will help in scrupting a competent Indian Medical Graduate who will be able to carter the health care needs of the society.

**Conclusion:**

Today’s medical students are tomorrow’s healthcare professionals. This study highlights that there is improvement in knowledge and attitude among medical students as they progress through their years in medical college. The process of imparting ethical knowledge must be started from the grass root level and continued throughout their medical course and this needs to be imparted as a multidisciplinary approach. Also teaching ethics needs to be reviewed by appropriate assessment strategy which will further strengthen our medical curriculum.

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