

*Original Research Paper***Assessment of Ethics and Professionalism among the Medical Students of a Tertiary Care Teaching Hospital in India: A Questionnaire Based Cross-sectional survey**

Padmaja Marathe <sup>1</sup>, Pooja SG <sup>2</sup>, Devi Bavishi <sup>3</sup>, Dhananjay Kokate <sup>4</sup>, Alhad Mulkalwar <sup>5</sup>, Nirmala Rege <sup>6</sup>

<sup>1</sup>Professor (Additional), Department of Pharmacology & Therapeutics, Seth GS Medical College and KEM Hospital, Mumbai.

<sup>2</sup>Resident, Department of Pharmacology & Therapeutics, Seth GS Medical College and KEM Hospital, Mumbai.

<sup>3</sup>Resident, Department of Surgery, Seth GS Medical College and KEM Hospital, Mumbai.

<sup>4</sup>Resident, Department of Pharmacology & Therapeutics, Seth GS Medical College and KEM Hospital, Mumbai.

<sup>5</sup>Intern, Seth GS Medical College and KEM Hospital, Mumbai.

<sup>6</sup>Professor Emeritus, Department of Pharmacology & Therapeutics, Seth GS Medical College and KEM Hospital, Mumbai.

**Corresponding Author:** Devi Bavishi

**E-mail:** devibavishi@gmail.com

**ABSTRACT**

**Background:** Alongside clinical expertise, application of standards of ethics and professionalism is an essential attribute for a physician. In India, until 2019, a formal curriculum for medical students in ethics and professionalism was non-existent. The newly launched undergraduate curriculum of 2019 has included a module on 'Attitude, Ethics and Communication.' This study was conducted to evaluate ethics and professionalism standards among the undergraduate medical students who have not been trained formally prior to implementation of the new curriculum, to assess the gap in the same.

**Methods:** This was a questionnaire-based study conducted among undergraduate medical students (n=192) of a university hospital in Mumbai. It consisted of two domains- A: to assess knowledge of ethics and professionalism and B: to evaluate students' attitude regarding ethics and professionalism. The data was analyzed using descriptive statistics.

**Findings:** Overall response rate was low (27%). Mean domain A score was 4.83/11 (<50%) with a trend of increase in the scores with increasing seniority (academic year of study). In Domain B, though the mean score for the different attributes was less than 5/10, humanistic values had higher scores whereas accountability and subordinate self-interest had the lowest scores. The percentage of students showing desirable responses for all the attributes ranged from 60 to 91%.

**Conclusion:** Undergraduate medical students have low knowledge of ethics and professionalism but have a reasonably positive attitude for attributes of professionalism. Our study highlights the need for systematic training and scope for improvement with the systematic training on attitude, ethics and communication (AETCOM) which has been recently introduced.

**Keywords:** Medical education, Professionalism, Ethics, Attitude, Communication

## Introduction

Ethics and professionalism are inherent components of medical practice. Ethical principles are basic to the physician-patient relationship. Jordan Cohen, President of the Association of American Medical Colleges said in his speech, “*The physician professional is defined not only by what he or she must know and do, but most importantly by a profound sense of what the physician must be*” [1]. Medical professionalism refers to a set of values such as accountability, altruism, commitment to excellence, compassion, integrity, respect, responsiveness and sensitivity to diversity [2]. The privileged status of being a physician comes with the obligation to render service to the sick while maintaining the highest ethical and professional standards.

Codes of ethical and professional conduct differ across institutions and countries. The historic Hippocratic oath is still sworn by the new medical graduates as a means to abide by the principles of professional etiquettes in many countries including India [3]. However, many nations have developed their own version of the document of professional conduct. In the United States of America, the American Medical Association Code of Medical Ethics offers ethical guidelines which govern the clinical practice [4]. Similarly, the British General Medical Council's Good Medical Practice sets standards of professional and ethical conduct for the practitioners in the United Kingdom. There are Australian Medical Council guidelines for Australian physicians [5]. In India, we have a code of conduct for medical practitioners laid down by the Medical Council of India [6].

Challenges to medical professionalism are manifold and are increasing by the day in India. Higher demand for specialty services, increased patient access to information, the influence of commerce to develop profit-centered services, heavy patient load, especially in public hospitals are some of the issues which may impinge on professional values. The rapid advances in technology and research provide more options for diagnosis and treatments. The high-cost diagnostic and treatment modalities need to be used judiciously keeping the patient's interest in mind. A plethora of new information is available without guidelines or comparative effectiveness for a clinician to process and use in practice, which is overwhelming [7]. The advances in technology also pose new ethical dilemmas and challenges. A medical practitioner needs to learn the attributes of Ethics and Professionalism before the start of clinical practice.

It was believed in the past that the concept and applications of professionalism and ethics are always learned from seniors and are not explicitly required to be covered in the curriculum. A medical student is expected to learn only the technically “right” treatment for the patient [8]. However, the scenario has changed now. The United States' Accreditation Council for Graduate Medical Education (ACGME) has set guidelines for evaluating general and specialty-specific competencies, including professionalism, in residency and fellowship programs [9].

If ethical behaviour and professional values are inculcated during medical school training, they are likely to have a lasting impression. A study among American doctors suggests that disciplinary action against doctors by state medical boards is predicted by low supervisor ratings of their professionalism in medical school [10]. Till recently, ethics and professionalism in India remained as a hidden curriculum, to be learnt by observation and experience. A need was felt to train students in the same using a comprehensive curriculum [8,11]. Therefore, in August 2019, the National Medical Commission (then called as Medical Council of India) introduced a new competency-based curriculum that includes a structured longitudinal program on attitude, communication and ethics (AETCOM) competencies [12]. It offers a framework of competency-based learning in the AETCOM domains that a medical professional must possess at the time of graduation to effectively fulfill the functions of an ‘Indian medical graduate’ as a clinician and a member of the health-care fraternity. The AETCOM module suggests an ideal format to impart the competencies related to ethics and professionalism. Since the new AETCOM curriculum is being implemented, it was felt that a baseline general assessment for the awareness among medical students may help us to provide a glimpse into the current situation. The data may help while implementing, revising and assessing the impact of the new AETCOM curriculum in our institute. With this background, we planned to conduct the present study to assess the knowledge and attitude of undergraduate medical students regarding ethics and professionalism.

## Methodology

This was a cross-sectional questionnaire-based survey conducted in a medical school attached to a tertiary care hospital in a metropolitan city in India. Institutional Ethics Committee permission was obtained (EC/OA-54/2018). The medical program is an undergraduate course that lasts four and a half years, followed by a one-year internship. Academic year 2 lasts for one and a half years, while academic years 1, 3 and 4 are each one year long. Clinical hospital-based training occurs in years 2, 3 and 4.

We made use of convenience sampling to gather the data, with students being contacted in the class and asked if they were willing to participate in the study. All students of 2<sup>nd</sup> (180), 3<sup>rd</sup> major & minor (360), and interns (180) were approached to participate in the study. The recruitment of participants was done from May to October 2018. Each participant was administered a two-part questionnaire following an informed consent. It was designed in a way to assess the knowledge of ethics and professionalism in the first part (domain A) and attitude towards professionalism in the second part (domain B) of the questionnaire.

Domain A of the questionnaire was designed by the authors keeping the local values, practices, and cultural beliefs in mind. Domain A included 6 single best response questions on knowledge about ethics and 5 single best response questions on knowledge about professionalism. The grading was: one point for each correct answer and no points for an incorrect answer or un-attempted question. Content validity and face validity were tested by 10 teaching faculty members of which 5 members were a part of the Institutional Bioethics Unit. The Content Validity Ratio was 0.833. The responses were analysed as a mean score out of 11 and the percentage of students giving desirable answers for ethics and professionalism were separately calculated.

Domain B comprised of 21 questions on the assessment of attitude towards professionalism. These questions were taken from a previously validated standard questionnaire [13]. The responses were obtained on a five-point Likert scale with 5 corresponding to 'strongly agree' and 1 to 'strongly disagree.' Attributes like ethics and moral standards, humanistic values, accountability, self-reflection and subordinate self-interests were assessed.

The data was analyzed using SPSS V.26 and expressed as descriptive statistics. The responses for the five-point Likert scale for each question were clubbed into three responses, desirable, neutral and undesirable. For the ease of analysis, the responses 'Agree' and 'Strongly agree' were combined as desirable responses and 'Disagree' and 'Strongly disagree' were considered as undesirable responses. The analysis of desirable responses was done to compare the groups.

Comparisons were made among the three groups viz 2<sup>nd</sup> year, 3<sup>rd</sup> year (major and minor), and interns as separate groups. The study data was reported in aggregate and no individual participant was identified in the analysis. The appropriate statistical tests were applied to compare the scores (Kruskal Wallis test) and percentage of correct responses (Chi-square test) among the groups after testing the data for normality.

## Results

Out of 720 students approached, 192 students consented to participate in the study. The response rate was 27.22%. Table 1 presents the demographic data of the students. The percentage of students responding from each academic year is given in Table 2.

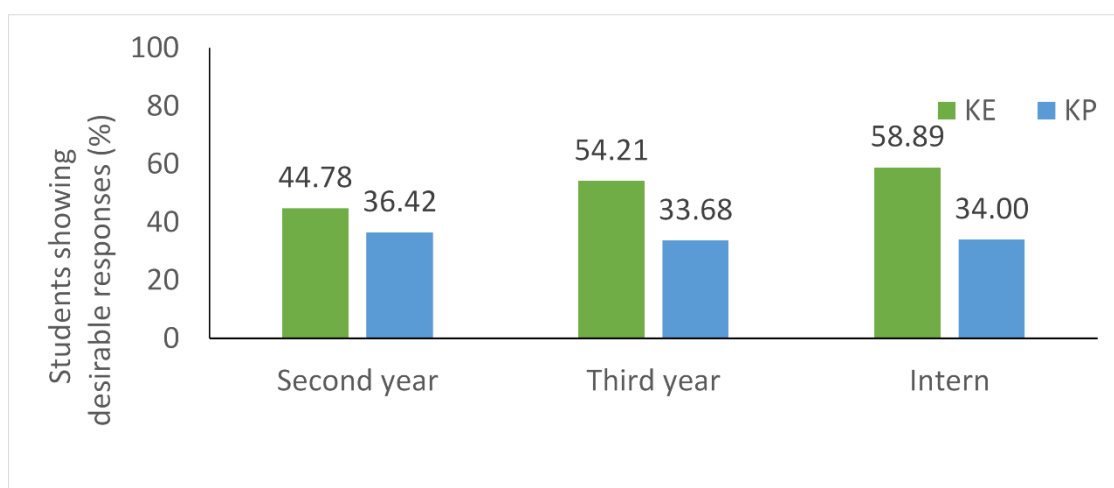
**Table 1: Demographic details of participants**

Variables	
Age (mean $\pm$ SD)	21.02 $\pm$ 1.73
Sex	
Male	53.13% (102)
Female	46.87% (90)

\*SD – Standard Deviation

**Table 2: Year-wise responders**

Year-wise responders	Domain A: Knowledge of ethics and professionalism (n=192)	Domain B: Attitude regarding professionalism N=188
Second year	67	66
Third year	95	93
Interns	30	29

**Domain A: Knowledge of Students on Ethics and Professionalism (Figure 1, Table 3)****Figure 1. Knowledge of ethics (KE) & professionalism (KP)****Table 3: Scores of Domain A: Knowledge of Ethics and Professionalism**

Groups	Scores (out of 11)
Second year	4.5±1.38
Third year	4.93±1.65
Intern	5.23±1.71
Composite	4.83±1.58

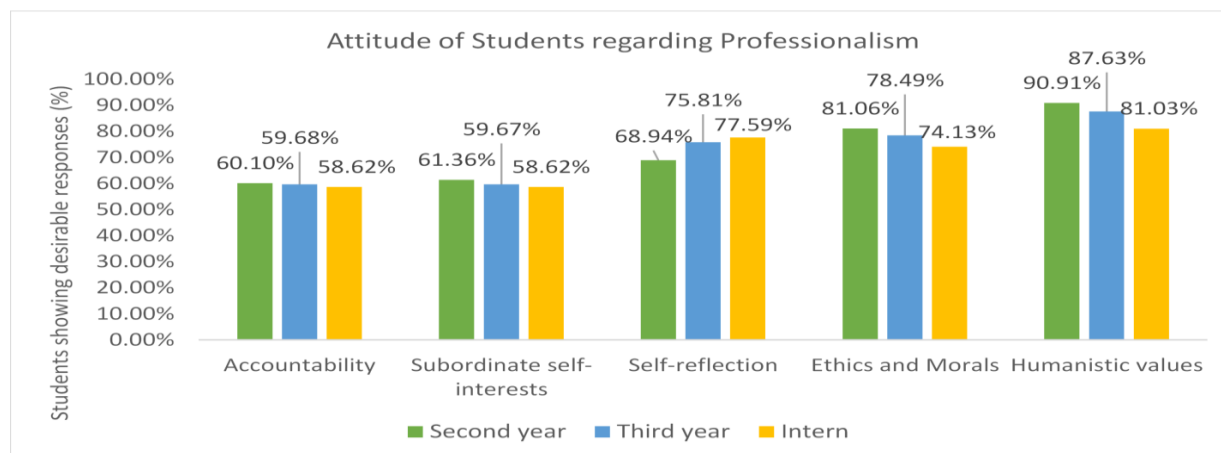
Expressed as mean±SD, Not significant using Kruskal Wallis test( $p=0.1409$ )  
\*SD – Standard deviation

All 192 participants completed Domain A of the questionnaire. The mean composite score was  $4.83\pm 1.58$  (<50%). As shown in Table 3, the score was getting higher with increasing professional year, however, the difference among the groups was not statistically significant.

The percentage of correct responses were higher for knowledge of ethics (KE) scores for second, third year students and interns as compared to those of the knowledge of professionalism (KP) scores as seen in Figure 1. There was also a rising trend of better responses with regards to KE from second year till internship but the same was not observed for KP results (Figure 1). The mean scores showed a dip in the third year and internship compared to the second year (Table 3)

### Domain B: Attitude of students regarding Professionalism (Figure 2, Table 4)

**Figure 2. Attitude of Students regarding Professionalism**



**Table 4: Scores of Domain B: Attitude of Students regarding Professionalism**

Attributes		Mean (out of 10)	SD
Accountability	Composite	3.61	1.13
	Second year	3.69	1.07
	Third year	3.57	1.13
	Intern	3.57	1.13
Humanistic values	Composite	4.32	0.75
	Second year	4.40	0.69
	Third year	4.28	0.78
	Intern	4.28	0.78
Self reflection	Composite	3.91	1.03
	Second year	3.84	1.07
	Third year	3.95	1.05
	Intern	3.95	1.05
Sub-ordinate self interest	Composite	3.62	1.04
	Second year	3.67	0.99
	Third year	3.62	1.02
	Intern	3.62	1.02
Ethics and morals	Composite	4.10	0.89
	Second year	4.15	0.88
	Third year	4.10	0.86
	Intern	4.10	0.86

\*SD – Standard Deviation

Domain B was attempted by 188 students. The scores of domain B are presented in Table 4. In Domain B, though the mean score for the different attributes was less than 5/10, attribute of humanistic values had higher scores, whereas the score was lower for accountability and subordinate self-interest. There is no change in the scores with increase in the professional years for any attribute.

The percentage of students showing desirable responses for all the attributes ranged from 60 to

91% (Figure 2). The highest percentage of students having desirable responses was for humanistic values followed by 'Ethics and Morals' and the lowest percentage was for accountability. There was a downward trend in responses with professional experience in medical school in all the attributes except for self-reflection, which showed an upward trend. The difference among the groups was not statistically significant for these attributes.

### Discussion

Medical ethics and professionalism are core competencies in the medical curriculum, but training in these two domains is not uniform across the world. Unlike in developed countries, no formal system of training and assessment existed in our country in the medical curriculum until recently before the novel AETCOM module was introduced in 2019. We felt the need for a baseline assessment before its implementation to know the existing knowledge and attitude of students about ethics and professionalism. Hence, we have attempted to generate this baseline data among the medical students of our institution by carrying out a questionnaire based cross-sectional survey. There was a gap in the knowledge and the attitude of students with respect to ethics and professionalism. In our study, the students were found to have low knowledge as the mean score in the knowledge domain was less than 50%. Also, no significant change in the scores with the increasing professional years impinges on the lack of training. The students were slightly better informed about knowledge of ethics than that of professionalism. This finding could possibly be explained by the fact that the students were exposed to the bioethics workshop once a year as a co-curricular activity in our institute.

In the attitude domain, large proportions of students responding desirably was a positive finding. The percentage of correct responses was observed to be higher for humanistic values and lower for accountability. These findings are similar to a study by Blue and others [13]. In our study, the percentage of desired responses decreased with an increase in the professional year, except for self-reflection. Similar results are reported by Peters et al from West Indies [14]. This falling trend in the attitude domain with increasing professional experience is an issue of concern.

Findings regarding lapses in knowledge and attitude concurrent with our study have been observed by previous researchers too [15-16]. The students may have less empathy and this does not change much over the years in medical school [15]. Another study reported that there was a general positive attitude towards professionalism in those who chose medicine as their profession. [17]. However, this might not necessarily mean that they have clarity as to how these attributes of professionalism function in practice [13]. The main limitation of the study was the low response rate to the questionnaire which may have led to non-response bias limiting the generalisability of the data.

Overall, the students had low knowledge of ethics and professionalism but had a positive attitude for attributes of professionalism. The knowledge of ethics and self-reflection attribute appeared to improve marginally with the increase in professional experience. From 2015, the UNESCO chair in Bioethics, Haifa in collaboration with multiple state universities across India, started 'Bioethics Units' in a few affiliated colleges. Bioethics co-curricular teaching was initiated in our college too and was well received by the students. This might have had an influence on the knowledge and attitude responses of some students.

The new formal AETCOM curriculum implemented by the National Medical Commission from 2019 in India focusses on developing attitudes and skills in addition to imparting knowledge of bioethics, communication skills and professionalism. It also incorporates formative and summative assessments of students on AETCOM [12]. Thus, there is a scope for improvement with intensive and practically oriented training under the new curriculum. Reassessment about knowledge and attitude regarding ethics and professionalism needs to be done periodically using the study questionnaires to find out the impact of AETCOM training. Early detection and correction of deficits in students' knowledge and attitude will help in better professional development. It is proposed that similar studies should be conducted to evaluate knowledge and attitude about ethics and professionalism among resident doctors and physicians in Indian settings. To conclude, our study has generated objective evidence regarding awareness and attitude about ethics and professionalism among medical students.

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**Annexure 1: Domain A of the questionnaire Scoring:  
Correct answer = 1, wrong answer =0**

**1. The four cardinal principles of medical ethics are:**

- Autonomy, beneficence, non-maleficence and justice
- Privacy, autonomy, beneficence and justice
- Autonomy, beneficence, veracity and justice
- Autonomy, beneficence, confidentiality and morality

**2. \_\_\_\_\_ means a system/mechanism which allows prioritizing healthcare resource allocation based on those who are most critically ill or in urgent need**

- Justice
- Equality
- Beneficence
- Triage

**1. If a patient is unconscious, which one of the following statement is correct with respect to taking decisions related to his/her healthcare?**

- Physician can make the final decision
- Living will/advance directive is a written document by patient about his healthcare decisions
- Attorney/family member speaks on behalf of patient
- b and c
- All of the above

**2. You are a family physician for MP family for many years. Mr. MP is diagnosed with depression and is prescribed antidepressant medications by your psychiatrist friend. Mr. MP refuses and is not willing to take medications despite your counselling. You in consultation with his wife start the treatment without his knowledge and inform him, that he is receiving vitamins. Mr. MP's condition improves gradually. The action is**

- appropriate as patient has improved
- not appropriate as you should have involved his attorney
- not appropriate as you treated against patient's consent
- appropriate as your intention was not to keep patient uninformed
- appropriate as wife has been involved in decision making

**5. A 14 years old child having scalp lacerations with active bleeding is brought to Emergency Medical Services (EMS) by his neighbour. You are EMS –in-charge and looking at the wound, you have decided to suture the scalp. Which one of the following actions is appropriate?**

- Go ahead with treatment as consent is not needed in an emergency
- Obtain consent from the accompanying adult neighbour for the procedure
- Wait for consent from both the parents before undertaking treatment
- Wait for consent of one parent

**6. When an adult patient refuses a life-saving treatment on religious grounds, a physician should**

- treat anyway
- persuade the patient through counseling
- refer the matter to hospital ethics committee
- b and c
- do not treat the patient and respect his decision.

**7. You are a Third year MBBS student. While taking case history in the ward, the patient reports to you that one of the resident doctors on that day appeared drunk as his breath was smelling of alcohol and speech was improper. What should you do?**

- Nothing as you are just a student, too junior in hierarchy
- Observe the resident and talk to him directly
- Counsel and convince the patient that this is unlikely
- Report the matter to Head of Unit or Dean

**8. You have completed a large funded clinical trial as a principal investigator and you ask a newly hired research assistant to analyse results quickly to submit a publication. The results are positive and the paper is accepted in a prestigious journal. Close to publication, you find that about 15% of the numbers are incorrect. You confront the research assistant who admits making up a few numbers in the huge data thinking it wouldn't affect the results. When analysed again, you find that results though numerically showing strong positive trend, the statistical significance reported in earlier analysis is now lost after correction. Which one of the following options would you select?**

- Terminate the research assistant to teach him a lesson.
- Reprimand him and report the incident to the sponsor.



- c) Notify the journal immediately and retract the publication.
  - d) Notify the journal immediately that there was a statistical error in the paper and provide the correction.
  - e) Do not report the incident to anyone because the results are still positive numerically
- 9. You are having a busy day as a consultant and you are still at hospital at 10.00 pm. You learn from the assistant that a general practitioner has requested a consultation from you to see his patient tonight. What is the most appropriate course of action for you to take:**
- a) Complain to the assistant that you are too busy and to leave you alone.
  - b) Attend the call
  - c) Call the practitioner to obtain more information and tell him to always inform you first about level of urgency.
  - d) refer to other physician
  - e) c and b
  - f) c and d
- 10. Which of the following actions is NOT an example of accountability as a student?**
- a) Provide constructive feedback to peers.
  - b) Address observed errors by fellow student.
  - c) Participate constructively in small group sessions.
  - d) Accept appropriate feedback from fellow students.
- 11. You are 2<sup>nd</sup> year postgraduate resident posted in EMS at KEM hospital. While you are examining patients in an overcrowded casualty, your medical senior teacher comes to you with her patient. The teacher requests you to examine her patient as she has to rush for her duty. What would you do?**
- a) Immediately comply to the request of your teacher and request her to come forward with the patient.
  - b) Humbly request the teacher to wait and continue examining the patients as they come.
  - c) Tell your first year junior to attend to the patient and you continue examining your patient
  - d) Politely request the teacher to wait and follow your own rule to examining two patients in the queue before examining a known patient coming out of turn

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