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## Assessment of Knowledge and Understanding of Professional Qualities in First-year Medical Students - A Cross - Sectional study

Harpreet Kour

*Jawaharlal Nehru Medical College, KLE Academy of Higher Education and Research, Belagavi,*  
harpreetkour.kour@gmail.com

Deepti Kadeangadi

*Jawaharlal Nehru Medical College, KLE Academy of Higher Education and Research, Belagavi,*  
deeptimkin@yahoo.co.in

M S. Shivaswamy

*Jawaharlal Nehru Medical College, KLE Academy of Higher Education and Research, Belagavi,*  
drshivaswamyms@yahoo.co.in

Parwati Patil

*Jawaharlal Nehru Medical College, KLE Academy of Higher Education, Belagavi, docparwati@yahoo.co.in*

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### **Cover Page Footnote**

Authors acknowledge Dr (Mrs) N S Mahaantashetti, Principal, JNMC, Belagavi and Dr V A Kothiwale, Registrar, KAHER, Belagavi for the administrative support. The authors also acknowledge all the firstyear MBBS students.

# Assessment of Knowledge and Understanding of Professional Qualities in First-year Medical Students - A Cross - Sectional study

Harpreet Kour\*, Deepti Kadeangadi, M S Shivaswamy, Parwati P Patil

Email: harpreetkour.kour@gmail.com

## Abstract

**Background:** Academic proficiency along with clinical skills are essential assets for a medical practitioner. Therefore, Attitudes, Ethics, and Communication (AETCOM) module has been implemented by the Medical Council of India (MCI) as a structured program to train and develop professional skills among the first year MBBS students in medical colleges in India since 2019. **Objective:** To assess the knowledge and understanding of professional qualities in first-year medical students. **Methods:** This questionnaire-based study was conducted among 156 first-year MBBS students. The questionnaire was divided into three parts, held during the AETCOM Module Classes. Categorical variables were given in the form of frequency tables. The responses were depicted in the form of percentages. **Results:** In the process of evaluation, a significant number of students (99.36%) thought that the objectives of the session and the questions about the case scenario were interesting. Majority of the students answered correctly for the multiple-choice question was Commitment to professional responsibilities don't mean. (96.79%). About 12.82% of the students answered at least 5 questions incorrectly. **Conclusion:** Inclusion of MCI AETCOM module in medical student's classes helped in learning and self-assessing professional skills and qualities.

**Keywords:** Attitude, Knowledge, Medical Students, Professionalism, Self-Assessment.

## Introduction

The medical profession requires the development of "Professionalism" for effective doctor-patient relationships and also to deliver a standard healthcare

## Harpreet Kour<sup>1</sup>, Deepti Kadeangadi<sup>2</sup>, MS Shivaswamy<sup>3</sup>, Parwati P Patil<sup>4</sup>

<sup>1</sup> Assistant Professor, PhD, Department of Physiology, Jawaharlal Nehru Medical College (JNMC), KLE Academy of Higher Education and Research (Deemed to be University), Belagavi, Karnataka, India - 590010

<sup>2</sup> Associate Professor, Department of Community Medicine, Jawaharlal Nehru Medical College (JNMC), KLE Academy of Higher Education and Research (Deemed to be University), Belagavi, Karnataka, India - 590010

<sup>3</sup> Professor and HOD, Department of Community Medicine, Jawaharlal Nehru Medical College (JNMC), KLE Academy of Higher Education and Research (Deemed to be University), Belagavi, Karnataka, India - 590010

<sup>4</sup> Professor and HOD, Department of Physiology, Jawaharlal Nehru Medical College (JNMC), KLE Academy of Higher Education and Research (Deemed to be University), Belagavi, Karnataka, India - 590010

\*Corresponding Author

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practice.<sup>1</sup> There is no such fixed list of professional behaviour, but according to some international literature, six attributes are enlisted, which are: Altruism, Accountability, Excellence, Duty, Honour, Integrity, and Respect for Others.<sup>2</sup> These qualities can have a positive influence on a student's attitudes and values when introduced during their preliminary phase.<sup>3</sup>

India stands at the second position in world population statistics, with more than 536 medical colleges and an annual intake of 67,218 Bachelor of Medicine and Bachelor of Surgery (MBBS) students in colleges governed by the Medical Council of India (MCI). India has registered medical professionals from both modern/allopathic medicine (MBBS) and traditional medicine (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy – AYUSH). Medical doctors to population ratio of 1:1000 were achieved as per the recommendations given by World Health Organization in 2018.<sup>4</sup> Though, India has produced enough medical graduates, assuring

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academic quality at the same time is a fundamental requirement to ensure the intended outcome, i.e., a competent medical practitioner who would be committed to excellence, responsive and accountable to patients, community, and profession.<sup>5,6</sup> Realizing the importance of professionalism, the MCI has proposed 'Revised Graduate Medical Education Regulations' in 2019 for shaping the Indian Medical Graduate (IMG).<sup>7</sup> MCI has developed a structured program for refining the Attitudes, Ethics and Communication (AETCOM) for the development of professionalism in IMG. AETCOM has been designed as a pattern of learning modules from first-year to final-year MBBS students, using case scenarios with a small group. MCI has developed a separate booklet describing the various aspects of the AETCOM modules.<sup>8</sup>

In recent years, there is a lot of published literature that has stated that AETCOM is a gold standard method for developing multiple skills in MBBS students. Various methods including didactic lectures, web-based teachings, reflection, seminars, small group discussions, etc can be used to teach professionalism.<sup>9-11</sup> Therefore this study was planned to teach AETCOM module 3.1 "Enumeration of professional qualities and role of the physician" followed by an assessment of the first-year MBBS students of 2019-2020 admission batch at a teaching hospital, Belagavi (Southern India).

### Materials and Methods

This was a 'Questionnaire Based cross-sectional study' which was conducted in the Department of Physiology in collaboration with the Department of Community Medicine. The study was held in the month of December 2019 during the AETCOM module classes. Ethical clearance was obtained from the JNMC Institutional Ethics Committee for Human Subjects via Ref: MDC/DOME/318 dated 24 December 2019. Undergraduate students of the first-year MBBS of the 2019-2020 batch were included in the study. Written informed consent was taken from all the enrolled participants at the time of data collection.

A total of 200 students were enrolled in 2019-2020. Among them, 156 students participated in the

scheduled AETCOM session and formed the sample size for this study.

The total sample size was computed as 133, using Solvin's formula (considering 5% absolute error).

### Procedure

A semi-structured pre-tested questionnaire was developed following a comprehensive review of the literature. The questionnaire consisted of three major parts. The first part consisted of identification details of the participants (Roll no, Gender and Date) The second part comprised of 10 multiple-choice questions (MCQs) covering important principles of medical professionalism. The third part had seven questions about the reinforcement program and feedback.

The students were tutored in an interactive session during their orientation program as per the competency-based medical education (CBME) curriculum for first-year medical students admitted in the year 2019-2020. Following this, the students were divided into two groups, with ten participants each and reading material for "case scenarios" was distributed. Each group was then instructed to role-play a "case scenario", following which, students were randomly invited to enact the role of a physician and to enumerate the qualities which were missing in the given "case scenarios". These role-plays were conducted not only to facilitate the learning process but also to encourage student interaction. Towards the end of each case, correct answers to MCQs were discussed, as they were based on the "Principles of Professionalism" (as mentioned in the American Board of Internal Medicine - ABIM Physician's charter). The moderator of the session concluded the case by highlighting all the key aspects of the role play.<sup>12</sup>

*Statistical analysis:* Data was recorded using IBM SPSS Statistics V23.0 and analyzed using Microsoft Excel. Categorical variables were presented in the form of a frequency table and the responses were depicted in form of percentages.

### Results

In the present study, a total of 200 subjects were screened, out of which 156 participated. A significant

number of the subjects (99.36%) were coherent regarding the objectives of the session. Many students (99.36%) considered that the questions posed regarding the “case scenarios” were thought-provoking. (Table 1). The summary of responses of MCQs observed that most of the students correctly answered a few questions regarding the commitment to professional responsibilities, altruism, and fundamental principle of definitive professional responsibilities, i.e., Q9 (96.79%) followed by Q1 (95.51%) and Q5 (94.23%) (Table 2). Of the total students, 13.46% answered all the questions correctly (Table 3).

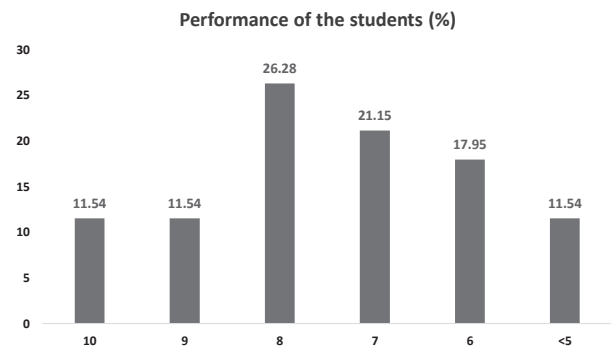
**Table 1:** Summary of the evaluation form (N=156).

Process evaluation form questions	Response	
	Yes N (%)	No N (%)
Were you clear about the objectives of the session in the beginning?	155 (99.36%)	1 (0.64%)
Do you think the case scenario (or any other approach) used in the session was interesting?	155 (99.36%)	1 (0.64%)
Do you think that the objectives of the session were realized?	154 (98.72%)	2 (1.28%)
Do you feel that the learning resources used were adequate?	150 (96.15%)	6 (3.85%)
Was the time management done effectively?	152 (97.44%)	4 (2.56%)

**Table 2:** Summary of medical students' responses to MCQs (N=156).

MCQ	Correct answer N (%)	Incorrect answer N (%)
Q1	149 (95.51%)	7 (4.49%)
Q2	81 (51.92%)	75 (48.08%)
Q3	139 (89.1%)	17 (10.9%)
Q4	114 (73.08%)	42 (26.92%)
Q5	147 (94.23%)	9 (5.77%)
Q6	51 (32.69%)	105 (67.31%)
Q7	80 (51.28%)	76 (48.72%)
Q8	99 (63.46%)	57 (36.54%)
Q9	151 (96.79%)	5 (3.21%)
Q10	146 (93.59%)	10 (6.41%)

**Table 3:** Performance of the students



\*Legends indicate the percentage of students who correctly answered questions (scored out of 10 marks).

## Discussion

Professionalism is a core competency of physicians. The foundation of Professionalism includes skill-based clinical knowledge, good communication skills, and a good understanding of ethics. Therefore, the study was planned to teach the AETCOM module to the MBBS first-year students.

In the first part of the questionnaire, more than 90% of the students thought that the AETCOM training would be useful for them as they had positively responded towards the clarity and realization of objectives, the case scenarios, enough learning resources, and time management. Like the present study, there were several studies conducted on the first-year medical students, but with different approaches. Govindrajan et al., conducted a study on ‘early clinical exposure’ in first-year MBBS students, which was also based on pre-test and post-test questionnaires designed on learning objectives; most of the students actively participated in this program and thought that such initiative would help them to learn in a better way (p-value <0.001).<sup>13</sup> Likewise many studies were conducted for effective communication skills in the medical students across various academic terms but with different assessment methods. In a study, 48 MBBS fourth-year students were enrolled, where they were trained for basic communication skills, patient interview techniques according to the Calgary-Cambridge guide format. Improvement was assessed by pre-post MCQs and others. Students also showed a positive attitude towards learning communication skills.<sup>14</sup>

In another study by M Vijayshree, evaluated the results of AETCOM sessions, where the majority of the students (92%) expressed that such sessions would help them to communicate with the patients better in their medical course.<sup>15</sup> On an average of 95.51% of the students accurately answered three MCQs i.e. [(Altruism contributes to the trust that is central to the(Q1), Among following which is not a fundamental principle of definitive professional responsibilities (Q5), commitment to professional responsibilities does not mean (Q9)] in the second part of the questionnaire. This showed that the students were well versed with a basis of medical professionalism after the reinforcement program. A study by Tabish *et al.*, has stated that self-assessment plays a vital role in the lifelong performance of physicians. For the medical students, assessment methods whether in the form of MCQs, True/False, short essay, modified essay questions, etc can be implemented as a form of exercise to assess their own performance against an external reliable measure.<sup>9</sup> Out of the 156 students, the majority of the students (27.56%) answered 8/10 questions correctly, which shows a good performance of the students. Another study done by Jagzape *et al.*, found that 93.83% of the MBBS undergraduates perceived that the AETCOM modules were useful and relevant, 78.46% of students thought the modules has improved their communication skills and comprehensive development.<sup>16</sup> Another study was conducted for the faculty and the medical interns using a modified AETCOM module to assess and improve communication skills. The study showed a significant improvement in the communication skills of students, as well as the faculty with respect to Structured Self-Assessment Questionnaires (SAQs) (P=0.001) and positive feedback was obtained from the majority (>80%) of students, faculty regarding the program.<sup>17</sup> Study by Tanwani R on attitude and perception towards the communication skill lab (CSL) concluded that 96.43% had agreed that such programs helped to improve the communication skills of the students.<sup>18</sup>

In the present study, some questions were incorrectly answered by many students (Q6, Q7, Q2). These questions were related to “Physician’s honesty towards their patients, empowerment to make

informed decisions, professional codes of conduct for physicians and commitment to professional responsibilities”.

Although the medical students are trained during their curriculum, the real challenge begins when they establish their clinical practice, which not only tests their medical competence but also their professional values. To achieve this prudently, both the medical educators and students ought to shoulder academic and moral responsibilities equally. A study by Sangappa *et al.*, on subjects from third-year undergraduate dental students, has evaluated the impact of communication skills and reported the improvement in students’ dentist-patient interactions at the end of the course.<sup>19</sup>

Another aspect is the burden of academics, examinations, and peer pressure which could pose as a barrier to transfer AETCOM training, which could be resolved by integration of medical and communication skills in relevant clinical situations.<sup>20</sup>

### Limitations

The study comprised of small sample size, a single batch of students, and was mono-centric in design.

*Recommendations:* Further, studies can focus on a different set of skills in the medical students at an early stage such as empathic listening (active listening or reflective listening) while diagnosing a patients’ illness. Medical institutions could train and evaluate the faculty on communication skills. Larger student populations across various geographic areas could be considered for future studies. Students of other medical streams (traditional practices) could be included as well.

### Conclusion

The study concluded that various parts of the structured questionnaire enabled the MBBS freshers to self-assess themselves with the knowledge they gained through the AETCOM training sessions. Also, the moderator learned about the student’s perceptions, knowledge, and attitudes towards their medical profession.

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## ANNEXURES

### KAHER's J N Medical College, Belagavi Assessment of Professional Qualities and Role of Physician MBBS – I Phase

#### Part I:

Date: 29 November 2019

Gender:

Roll No:

#### Part 2: MCQs: Encircle the correct answer

Q1: Altruism contributes to the trust that is central to the:

- |                                   |  |
|-----------------------------------|--|
| a. Physician-Patient relationship | c. Patient-Administration relationship |
| b. Physician-Parent relationship  | d. Patient-Family relationship         |

Q2: Physicians must be honest with their patients and empower them to make informed decisions about their treatment is explained by:

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| a. Principal of Social Commitment | c. Principal of Autonomy             |
| b. Principal of Patient Welfare   | d. Principal of mutual understanding |

Q3: Who should work actively to eliminate discrimination in healthcare, whether based on race, gender, socioeconomic status, ethnicity, religion, or any other social category.

- |               |              |
|---------------|--------------|
| a. Government | c. NGO's     |
| b. Patient    | d. Physician |

Q4: Commitment to professional competence necessary for the provision of quality care means:

- a. Lifelong learning for maintaining the medical knowledge and clinical and team skills
- b. To ensure that patients are completely and honestly informed before the patient has consented to treatment
- c. Earning the trust and confidence of patients
- d. Dedication to serving the interest of the patient



- Q5: Among the following which is not the fundamental principle of definitive professional responsibilities.
- a. Principle of primacy of patient welfare
  - b. Principle of Technology savvy
  - c. Principle of social justice
  - d. Principle of patient autonomy
- Q6: Professional codes of conduct for physicians are usually
- a. Developed by the Department of Health and Human Services
  - b. Written by the President's Commission on Bioethics
  - c. Developed by physicians themselves
  - d. Written by patients
- Q7: Patients have an obligation to maintain confidentiality, just as doctors do.
- a. Correct
  - b. Incorrect
  - c. May Be d.
  - d. None of these
- Q8: Physicians are legally and morally permitted to 'fire' a patient (to ask a patient to find another doctor).
- a. Correct
  - b. Incorrect
  - c. May Be d.
  - d. None of these
- Q9: Commitment to professional responsibilities doesn't mean:
- a. To work collaboratively to maximize patient care
  - b. To participate in the processes of self-regulation
  - c. To be respectful of one another
  - d. To gain the personnel benefits
- Q10: Benevolent in a patient-physician relationship means?
- a. Physician should be gentle while examining the patient
  - b. No sympathy in understanding the patient
  - c. Should not be considerate and compassionate
  - d. All of the above

