

Effect of Education in AETCOM Competencies in Shaping the Professional Attitudes of Medical Students

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Abstract

Introduction: The Attitude, Ethics and Communication (AETCOM) module has been introduced in the recent Competency Based Medical Education (CBME) curriculum in the year 2019 as a means of directly and explicitly imparting soft skills to students. As this program has been implemented phase-wise in our institution, we conducted a preliminary survey to identify professional attitudes of students in the 2019-20 batch who have had some exposure to AETCOM education as compared to the earlier 2017-18 batch who had no exposure to the modules.

Methods: This was an observational cross-sectional study involving two groups of undergraduate medical students who were exposed and not exposed to AETCOM modules respectively. A self-administered semi-structured questionnaire comprising 20 closed-ended and 4 open-ended items related to the study topic was designed for data collection. Responses were entered and tabulated in MS Excel and analyzed using SPSS version 21 by descriptive and inferential statistics.

Results: A total of 103 medical students participated. The Mean Attitude Score (MAS) was significantly higher in the batch exposed to the AETCOM sessions. Among those exposed, 91.65% agreed that their behaviour towards patients had changed after attending the sessions. In addition, they gave suggestions on how the delivery of the modules could be improved in the second professional year.

Conclusion: Formal training in AETCOM competencies has a positive effect in shaping the professional attitudes of medical students. Role plays and clinical exposure are perceived as effective ways of imparting ethics education. This positive effect can be enhanced with improved teaching-learning methods for successive batches of undergraduate medical trainees at our institution.

Keywords: professional attitude, ethics, communication, competency, medical education

Introduction

In an era of deteriorating doctor patient relationship, it is imperative for budding doctors in training to develop the right attitude towards their patients for a successful future career.

The erstwhile Medical Council of India (MCI) identified the need for formal education aimed at personal and professional development of medical students. As a result, the Attitude, Ethics and Communication (AETCOM) module was introduced in the recent Competency Based Medical Education (CBME) curriculum in the year 2019, as a means of directly and explicitly imparting soft skills to students. This training module is a longitudinal program spread across all phases of the undergraduate medical program.

At our institution, the AETCOM module was implemented in a phased manner starting with

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the departments of Anatomy, Physiology, Biochemistry and Community Medicine handling learning modules 1.1 to 1.5 in the first professional year. Next the departments of Pathology, Community Medicine, Pharmacology, Forensic Medicine and Microbiology were given responsibility for learning modules 2.1 to 2.8 in the second phase of the undergraduate medical program. Each academic discipline has its unique way of implementing the modules within the recommended teaching-learning methods and number of hours allotted by the National Medical Commission (NMC) which replaced the MCI in September 2020.

There are several challenges in implementing AETCOM as observed in a record review of participants' feedback in sensitization workshops for faculty conducted at a tertiary care teaching hospital in 2018. The first and most challenging facet was shortage of trained teachers, mentors and role models. Secondly, appropriate tools need to be designed and standardized for proper assessment of students on competencies acquired through AETCOM training. Thirdly, quality and sustainability of the module should be ensured through effective enforcement and monitoring mechanisms (Zayapragassarazan et al, 2019).

The impact of education in AETCOM competencies can be fully appreciated only after the 2019-20 batch graduates to become interns whose performance and behaviour can be directly observed by their supervisors at the workplace. However, at the present stage of completion of the first and second phases of the program, we conducted a preliminary survey to find out the professional attitudes of students who have had some exposure to the modules as compared to the earlier 2017-18 batch of students who went through the traditional curriculum and therefore had no exposure to AETCOM modules.

In addition, this research would enable us to record the reaction and satisfaction of students to the manner in which the module were handled by the facilitators. It will help determine whether learning has occurred and how faculty can improve the delivery of Phase II AETCOM

module in terms of teaching and assessment methodology.

Material and Methods

This observational cross-sectional study involved undergraduate medical (MBBS) students of 2017-18 and 2019-20 batches who consented to be part of the study. The purposive non-probability sampling method was employed and participants were divided into two groups:-

1st group – 2017-18 MBBS batch (non-CBME, not exposed to AETCOM education)

2nd group – 2019-20 MBBS batch (CBME, exposed to AETCOM education)

Operational definition: Professional attitudes are behaviours that serve to maintain patient interest above physician self-interest. (Al-Sudani D et al, 2013)

For the 2nd group, i.e. 2019-20 MBBS batch, the following AETCOM module sessions were conducted by the Department of Forensic Medicine:-

Module 2.6 – Case studies on autonomy and decision making, which introduced the student to issues in autonomy including competence and capacity to make decisions.

Competency addressed: Identify, discuss and defend medico-legal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support (KH)

In the first session on May 21st 2021, the students were introduced to the case scenario "Life on a machine" from the AETCOM book. An anchoring lecture was given to explain key concepts and terminology relevant to the module. The second session on May 28th 2021 comprised case discussions where students presented their reactions and reflections on what they had learnt so far. The final session on June 4th 2021, was the case closure and concluding remarks on important learning points made with the aid of PowerPoint slides. An additional two hours of self-directed learning were allotted beyond the routine class timings.

Module 2.7 – *Case studies on autonomy and decision making*, which introduced the student to further issues in autonomy including informed consent and informed refusal.

Competency addressed: Identify, discuss and defend medico-legal, socio-cultural and ethical issues as they pertain to consent for surgical procedures (KH)

In the first session on June 11th 2021, the students were introduced to the case scenario “*Who is the doctor?*” from the AETCOM book. A 20 minute anchoring lecture was delivered to explain the concepts and components of informed consent and informed refusal. The students were invited to give their views on the story they had just read. In the second session on June 18th 2021, they were divided into four groups and asked to share their reflections on:-

- *What happened?* – What have I learned from this experience?
- *So what??* – What are the applications of this learning?
- *What next???* – What skills do I need to handle this kind of situation?
- What are the medico-legal, socio-cultural and ethical issues in this case?

The final session on 25th June 2021 comprised a role play by the students portraying the rude behaviour of a doctor in the first scene and proper conduct in the second in relation to a patient’s refusal to undergo a diagnostic procedure. This was followed by closure of the case and concluding remarks by the teacher. Students were encouraged to engage in self-directed learning through library and online resources to facilitate their learning.

The present study was conducted over a period of six months (November 2021 to April 2022) after the CBME Batch of 2019-20 had been exposed to learning modules 1.1 to 2.8 in their first and second professional years. A self-administered semi-structured questionnaire containing a combination of 20 closed - ended and 4 open-ended items related to the topic of the study was designed for data collection. It was entered and tabulated in MS Excel sheet

and analyzed using SPSS version 21 by descriptive and inferential statistics.

Responses to closed-ended items were graded on a five point Likert scale where 1=*Strongly Disagree*, 2=*Disagree*, 3=*Neutral*, 4=*Agree* and 5=*Strongly Agree*. Accordingly, points were awarded for each item in the questionnaire, total score for each participant calculated and the mean attitude score generated separately for the two batches of students. Approximately 50% of items were negatively formulated and corrections were made during the analysis procedures.

The unpaired **Student’s t test** was employed to find out if there were statistically significant differences in the mean attitude scores secured by medical students in the two defined groups (dos Santos *et al*, 2017).

Qualitative analysis of responses to open-ended questions was performed according to predetermined codes related to professional attributes of a doctor. The codes identified for the purpose of this study were Ethics, Professionalism, Communication, Diversity and Empathy. Each author read the responses and highlighted portions of text eliciting a particular AETCOM issue (Dhaliwal *et al*, 2018).

The following codes were used for content analysis of responses given by the participants of the 2nd group (exposed to the module) to the open ended item #1 Describe your learning experience in ethics, communication and professionalism through the AETCOM module:-
Ethics – if the content in the response mentioned ‘Good’ or ‘Beneficial’

Professionalism – when the content in the response referred to doctor-patient relationship

Communication – when the response made a reference to improvement in communication skills

Diversity – response referring to change or different experience from before

Empathy – response referring to feelings, emotions and developing empathy towards patients

Ethical considerations

The study was conducted after obtaining written informed consent of all the participants. In the Information Sheet and Consent Form provided, we described the purpose of the study and the right to withdraw at any time without any repercussions. It was duly approved by the Institutional Ethics Committee vide Letter no. NEIGR/IEC/M1/F8/2021 dated 13th December, 2021.

Results

The present study examined the effect of formal education in AETCOM competencies in

shaping the professional attitudes of medical students using a validated questionnaire to measure attitudinal performance for the purpose of this research. A total of 103 medical students (55 from the 2017-18 batch and 48 from the 2019-20 batch) participated with 99% of them in the age group 20-25 years. Scores obtained by respondents ranged from 3.0 – 4.70 for the 1st group and 3.45 – 4.75 for the 2nd group. The mean attitude score was found to be significantly higher in the latter batch exposed to AETCOM sessions which is depicted in Table 1. However, the magnitude of correlation between exposure to AETCOM and professional attitude was small when measured by Cohen's *d* effect size (Sullivan *et al*, 2012).

Table 1: Mean attitude scores of medical students according to batches

	Batches		Student's t test		“ <i>d</i> ” effect (Cohen)
	2017-18 <i>n</i> =55	2019-20 <i>n</i> =48	<i>t</i> value	<i>p</i> value	
Mean score	4.06	4.17	-1.68	0.04*	0.12
SD	0.36	0.29			

*Statistical significance was set at $p < 0.05$. SD=Standard Deviation.

Analysis of close-ended items

Responses to individual close-ended items (nos.1-20) were subjected to descriptive analysis and results worked out separately for the 1st and 2nd groups. These were expressed in frequency and percentage (Table 2). With reference to the first item, 94.5% of respondents from the 1st group and 95.8% from the 2nd group agreed that the inclusion of ethics and professionalism in the medical curriculum will help them in their future career as doctors. In response to the statement that every physician should ensure that patients receive medical care consistent with their values and preferences, 85.4% of participants from the 1st group and 89.65% from the 2nd group expressed their agreement. Again, 94.5% from the 1st group and 97.9% from the 2nd group agreed that a good rapport with the patient and good communication skills help to avoid misunderstanding and filing of lawsuits by

patients against doctors. In reply to another item, 83.7% from the 1st group and 91.6% from the 2nd group differed with the statement that lack of privacy during medical examination of a rape victim in a low resource primary health centre is not their concern. Further, 29.1% of respondents from the 1st group and 18.8% from the 2nd group did not see anything wrong in accepting endorsements from pharmaceutical companies as this would enable them to expand their practice. Again 78.2% of students from the 1st group and 93.7% from the 2nd group were not in favour of the statement that a Registered Medical Practitioner can issue a certificate of sickness or fitness even if facts about the patient's case are not within their personal knowledge. In response to an item on end of life care, 83.6% from the 1st group and 91.7% from the 2nd group disagreed that withdrawal of life support is justified for a patient admitted in the ICU who is not able to pay the hospital bill. Finally, 87.3% of participants from

the 1st group and 93.7% from the 2nd group agreed that while having a conversation with a patient, they must maintain eye contact, listen

empathetically and give their full attention despite their busy schedule.

Table 2: Mean attitude scores for selected items in the questionnaire

	Item	Batch 2017-18 (n=55)		Batch 2019-20 (n=48)	
		Mean score	SD	Mean score	SD
1	Respect for patient autonomy	4.43	0.68	4.43	0.71
2	Treatment of a patient without explicit consent in an emergency	4.45	0.63	4.20	0.71
3	A doctor can withhold a diagnosis of cancer from a patient on the request of the spouse or relatives	2.85	1.04	2.33	1.03
4	Warning a patient about the side effects of a prescribed drug	4.50	0.57	4.60	0.57
5	Dissection table etiquette does not matter	1.63	0.77	1.45	0.74
6	Physician's paternalism trumps over patient autonomy	2.56	1.04	2.27	0.98
7	Medical errors should not be disclosed to patients	2.50	0.81	1.97	0.75
8	Physicians should assist death in patients who no longer have the will to live	2.41	0.89	2.31	1.06

Likert's scale 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly disagree; SD=Standard Deviation

Analysis of open-ended items

Qualitative analysis of responses to open-ended questions was performed using predetermined codes for the 2nd group, i.e. 2019-20 batch exposed to AETCOM education. The issues that emerged were Ethics, Professionalism, Communication, Diversity and Empathy. Excerpts from responses to open ended question on learning experience are

shown in Table 3. Participants were asked if their behaviour had changed after AETCOM and 91.6% of them replied in the affirmative. In response to the item on which method of teaching-learning according to them suits best for imparting ethics education, 22.9% of them answered 'Role play and skits'. Students gave their suggestions on how the delivery of the AETCOM module could be improved in the second professional year (Table 4).

Table 3: Excerpts from responses on learning experience through the AETCOM module

Excerpts	Issues identified
1. 'Opened my mind and helped me think about my decisions'	Ethics
2. 'Highly beneficial'	Ethics
3. 'Learned communication and empathy'	Communication, Empathy
4. 'Gives a view different from the old one'	Diversity
5. 'Cleared confusion and answered questions on dealing with patients'	Professionalism
6. 'Helped in having good patient-doctor relationship'	Professionalism
7. 'Helpful in teaching about soft skills and attitude'	Attitude, Ethics
8. 'We should feel empathy, have patience and never abandon patients'	Empathy, Professionalism
9. 'It is a good thing, should be reminded of correct speech and attitude'	Ethics, Communication, Attitude
10. 'I like it very much, it is a movement of change'	Diversity

Table 4: Students' responses to open-ended items in the questionnaire (n=48)

Questionnaire item	Response	Number (%)
Did your behaviour towards your patients change after participating in AETCOM classes?	Yes	44 (91.6)
	No	2 (4.2)
	Don't know	2 (4.2)
Which method of teaching-learning according to you suits best for imparting ethics education?	Role play, skits	11 (22.9)
	Case scenarios	8 (16.6)
	Exposure to clinics	7 (14.6)
	Group discussion	7 (14.6)
	Observing seniors	4 (8.3)
Please give your suggestions for improving the module		
"Role play by doctors on handling various scenarios"		
"Should be taken to hospital to observe how doctors behave with patients"		
"Role plays and actually visiting the wards to see how it works"		
"More of real life cases and lawsuits should be included"		
"Make us watch videos!"		
"More role plays, interaction with patients"		
"Clinical exposure to practically understand how to interact with patients"		

Discussion

The teaching and learning of attitudes associated with good professional medical practice have been acknowledged as essential aspects of medical education, and there is a growing consensus that educational experiences that develop students' professional attitudes must be explicitly included in the curriculum (dos Santos *et al*, 2017).

In the study, we observed that the mean attitude score of the 2nd group (2019-20batch) was better than the 1st group (2017-18batch) and the difference was statistically significant ($p < 0.05$).

However, the magnitude of effect was small when calculated by Cohen's *d* statistic. Again, descriptive analysis of specific closed-ended items in the questionnaire showed more favourable attitudes amongst participants in the 2nd group.

Qualitative content analysis of open-ended items elicited valuable information about the perceptions and reactions of students exposed to the module. The suggestions and recommendations of the participants have been taken into account while implementing Phase II AETCOM for the MBBS Batch of 2020-21. As faculty and facilitators, we are encouraging students to perform skits and role plays while

also arranging for more clinical exposure and experiential learning.

A study conducted at a medical college in Delhi observed that 73% of medical students perceived a definite positive change in their affective behaviour towards their patients after undergoing humanities based study module in 2010-11. (Gurtoo *et al*, 2013) This is in agreement with our findings where a majority (91.6%) of participants from the 2nd group felt that their behaviour towards their patients changed for the better after being exposed to the AETCOM module. According to Komattil R *et al*, a personal and professional development module introduced in the medical curriculum in 2006 was assessed by students as useful for improvement of their affective skills and rated as "highly relevant" to the medical profession. (Komattil *et al*, 2016)

Role play has been voted as the most popular and suitable method for imparting ethics education (Table 4). Not only does it conjure feelings and emotions but also helps students express themselves and practice dealing with real life situations that they may face in their future career as doctors. Moreover, it is an effective way of improving a student's communication and language skills, verbal and non-verbal interaction with patients, and public relations with various stakeholders. Our findings concur with that of Palimar *et al*. where

82.8% of respondents judge role play to be the best method to teach AETCOM. (Palimar *et al*, 2021) The virtues and responsibilities of the doctor were better internalized when the students themselves participated in the role play and reflected upon it (Tikare *et al*, 2021).

Real life personal experience narratives provide students with greater insights into an ethical issue that they encounter in the wards or clinics. (Pandya *et al*, 2016) A study from Delhi explored the reflective narratives written by medical students for content relating to the attributes of Attitude, Behaviour, Communication, Diversity and Empathy. (Dhaliwal *et al*, 2018) The authors opined that reflective student narratives are a useful and enjoyable way of teaching students about issues in the affective domain that are not conventionally taught. Additionally, it could be used as an assessment tool for competencies in the affective domain.

In another study, 92% of respondents concurred that the AETCOM module would definitely improve their communication skills with patients. (Vijayasree, 2019) Further, Shilpa *et al*. observed that students have realized the importance of empathy for building a good doctor-patient relationship and its role in effective patient management through the AETCOM sessions. (Shilpa *et al*, 2020) These findings are consistent with our study where the majority of participants had a good learning experience in ethics, communication and professionalism through the AETCOM module.

Students' reactions and satisfaction with a module affect their knowledge, attitude and skills in a particular area. Therefore, the onus is on the teachers to facilitate learning by making lesson plans according to learning objectives while sustaining the interest and attention of learners. Once students realize the relevance of what they are learning, they will be motivated to take the initiative and pursue it without any prompting from the teacher. In this regard, qualitative data with respect to our study gave us valuable feedback on 2nd group participants' overall perception of the AETCOM module. Their satisfaction is recorded in the statements depicted in Table 3. This, in part, may have

influenced their mean attitude scores and performance as evidenced by our quantitative data analysis.

Conclusion

We conclude that there are significant differences in the mean attitude scores in the two groups who were either not exposed or exposed to formal AETCOM training. Role plays and clinical exposure are perceived as effective ways of imparting ethics education. This study could be the basis for designing an experimental research method to enable us to measure the effect of AETCOM education on professional attitudes of medical students in future. Students' attitudinal performance can be enhanced with better teaching-learning and assessment methods for successive batches of MBBS trainees. The suggestions for improvement of the AETCOM modules may be taken up during the course of its implementation for enhanced satisfaction and greater educational impact.

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Conflict of interest

None to declare

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