

Feedback of Undergraduate Medical Students on AETCOM Module 3.1 - The Foundations of Communication: A Quasi-Experimental Study

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Abstract

Background: Effective communication skills are necessary for patient satisfaction, compliance with treatment plans, and ethical medicine practice. The competency-based curriculum in India implemented AETCOM modules from the first year of MBBS to teach such skills early. However, there are few studies reporting student feedback on the importance and impact of these modules. The present study aimed to evaluate the effectiveness of AETCOM module 3.1 on doctor-patient communication skills among Phase III MBBS students using pretest and posttest assessment. **Material & Methods:** This pre-test post-test quasi-experimental study was conducted in a central India tertiary care institute from August to September 2025. Out of 200 Phase III MBBS students, 184 were included after taking consent, who underwent interactive sessions on the Kalamazoo Consensus Statement. Knowledge gain was measured using a structured 10-item multiple-choice question (MCQ) questionnaire using Kobo Tool mobile application (paired t-test, $p < 0.05$), while feedback was measured on a 5-point Likert scale (Cronbach's $\alpha = 0.92$). Jamovi version 2.6.44 & R software version 4.5.2 used for analysis. paired t-test used to compare mean scores. Frequencies and percentages for student feedback. **Result:** Mean pretest score was 6.36 ± 1.58 , while mean post-test score improved significantly by 8.61 ± 1.21 ($t = -15.3$, $p < 0.001$). Overall, 67.4% were strongly agreed, 31.5% were agreed whereas 0.5% were neutral/strongly disagreed on satisfaction with AETCOM communication session. **Conclusion:** AETCOM Competency 3.1 is effective in improving the communication skills of the third professional (Part I) MBBS students. Students feedback evokes high satisfaction of session.

Keywords: AETCOM, Communication skills, Medical Education, quasi-experimental study, student feedback

Introduction

Communication skills are essential for safe and effective medical practice. It influences history-taking, explaining diagnoses and treatments, making shared decisions, and ensuring adherence. Good communication also affects clinical outcomes and patient satisfaction. In India, outpatient departments are crowded and doctor-patient interactions are short. Therefore, clear, empathetic, and culturally aware communication is crucial for maintaining trust and reducing conflict. Recent reviews of communication skills training in medical schools show that, despite clear benefits, structured teaching and assessment of these skills are inconsistently applied and often take a back seat in undergraduate programs.^[1-3]

However, there have been attempts to rectify this problem through Competency Based Medical Education (CBME) for the Indian Medical Graduate, where competencies for the graduate's function as a clinician, communicator, leader, and professional have been clearly stated and longitudinal development of attitudes, ethics and communication has been

made mandatory. The NMC Attitude, Ethics and Communication (AETCOM) modules offer a nationwide template to integrate these competencies from Year 1 through experiential approaches like role playing, reflection, and patient stories along with didactic teaching.^[4] Module 3.1, titled 'the foundations of communication', within the AETCOM series addresses basic concepts of doctor-patient communication, such as respect, confidentiality, non-verbal behavior, and patient-centered interviewing.^[4]

Based on evidence from India, it appears that structured communication skills training interventions help in improving the attitude and performance of medical students, as well as being viewed as an important aspect of their training. Significant improvements in the checklist scores for communication and positive student feedback have been observed after the completion of communication skills training programmes in both undergraduate and postgraduate studies.^[5] Nevertheless, almost all the studies which have been conducted until now have assessed either standalone communication skills training workshops or overall curricula

and not focused specifically on the individual AETCOM modules recommended under CBME.^[6] Specifically, very few studies exist which have used a quasi-experimental design to analyse medical students' feedback on the impact of AETCOM module 3.1 on their self-perceived communication skills and change in communication-related attitudes and self-confidence.^[4]

To address this gap this study aims to evaluate the effectiveness of AETCOM module 3.1 on doctor-patient communication skills among Phase III MBBS students using pretest and posttest assessment.

Material & Methods

Study design

A quasi experimental pretest-posttest study was conducted among Phase III MBBS students at a tertiary care teaching institution in central India from August to September 2025.

Study Participants

Undergraduate medical students of Phase III who attended the AETCOM training sessions in phase I and II and who have completed the core clinical postings were the study population.

Inclusion criteria

Among 200 phase III MBBS students, study participants were selected after taking informed consent with universal sampling technique.

Exclusion criteria

Students not willing to give consent or absent during training session were excluded.

Participants selection process

All Phase III MBBS students (N = 200) were invited to participate in the study. Sixteen of them did not attend the training session on that particular day and were excluded from the study. One hundred & eighty-four students participated in the entire process.

Intervention (AETCOM module 3.1)

The intervention was carried out during AETCOM scheduled class in form of an interactive and structured session on doctor-patient communication.

Total duration: Single session lasting 135 minutes following the session structure was conducted.

Session structure:

1. Ice breaking and objectives illustration (15 minutes)
2. Theory learning using Kalamazoo consensus model via power point presentation (45 minutes)
3. Demonstration through video on communication skills (15 minutes)
4. Group discussion on case studies (60 minutes).

Facilitators and ratio: There were three facilitators, who are trained faculties, throughout the process. Ratio of total

facilitators : student is 1:60, while the small group facilitators' ratio is 1:12 during the case study discussion.

Competencies covered: History taking skills, patient centered counselling skills, breaking bad news, empathy, and active listening skills mapped to the competencies mentioned in AETCOM module 3.1.

Standardized procedures: Facilitator guide, same slides, case study scripts were used throughout the process. Facilitators went through a 2 hours orientation to deliver the session.

Data collection and evaluation

Knowledge/Skills Evaluation: A 10-item multiple-choice questionnaire (MCQ) was created based on the Kalamazoo elements for assessing cognitive learning. Each correct answer was awarded 1 mark. The pre-test was conducted prior

Feedback/Evaluation: A 5-point Likert Scale questionnaire [strongly disagree (1) to strongly agree (5)] was used to measure opinions about session goals, relevance, teaching strategies, participation, facilitation, authenticity of case scenarios, and overall satisfaction.

Questionnaire validity and reliability

The 10-item MCQ and 10-item Likert feedback questionnaire developed according to Kalamazoo consensus statement and AETCOM module 3.1 competencies. Content validation was conducted by the panel of four experts consisting of faculty members in community medicine who rated all items in terms of relevance and clarity. These instruments were tried on 15 MBBS students; based on pilot testing feedback, for clarifications in wording of items. Internal consistency was checked using Cronbach's alpha; for Likert feedback scale, $\alpha = 0.92$, which proves high reliability of the scale.

Statistical Analysis

Analysis done from Jamovi software version 2.6.44 and R software version 4.5.2. Mean score of pre and post-test multiple choice question compared by paired T test. P value < 0.05 determined for statistical significance. The feedback on session content and delivery was analysed as counts and percentages.

Results:

184 MBBS students participated in the study Mean age of participants was 21.8 ± 1.19 . Out of 184 students 93 (50.5%) were male and 91 (49.4%) were female (figure 1).

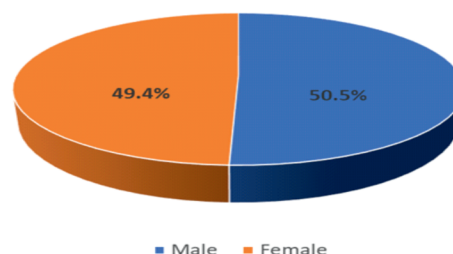


Figure 1: Gender distribution of participants

Mean pretest score of participants (n=184) was 6.36 ± 1.58 and post test mean score was 8.61 ± 1.2 . (figure 2).

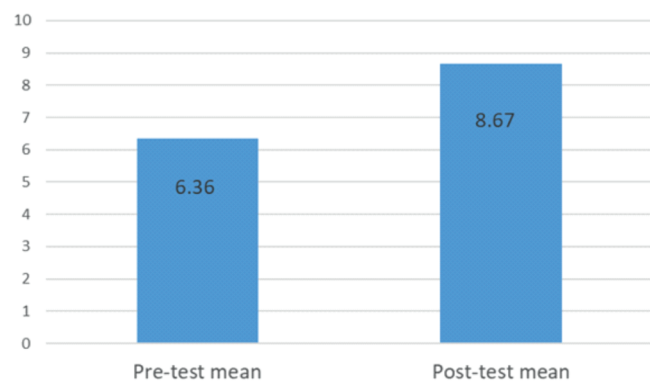


Figure 2: Pre test and post test mean score

Mean Pretest and post test score compared with paired t test shows the significant difference in the student's response with p value < 0.05 significant. $t = -15.301$, $df = 183$, p-value < 0.01, confidence interval: -2.607627 to -2.011938, mean difference: -2.309783

Feedback on session (Intervention) content and delivery shows that session's objective was clearly stated, 134 students (72.8%) strongly agreed and 58 students (31.5%) agreed. Only 1 student (0.5%) stated they strongly disagreed with this statement. In terms of how applicable the session content seemed to real life clinical situations, 123 students (66.8%) strongly agreed and 58 students (31.5%) agreed. Only 1 student (0.5%) strongly disagreed with this statement. 121 (65.9%) students strongly agreed while 61 (33.2%) agreed that attending the session had enhanced their understanding about communication skills between doctors and patients in comparison to 1 (0.5%) who strongly disagreed. Assessment methods utilized during the session were effective where lectures, videos, group discussion scored high with 134 (72.8%) respondents strongly agreeing while 43 (23.4%) agreed and 5 (2.7%) respondents were neutral. Participants felt that they could actively participate during the session and 108 (58.7%) students strongly agreed and 64 (34.8%) agreed whereas 11 (6.0%) students were neutral. Faculty who facilitated the sessions did well and were able to create a learning atmosphere where 129 (70.1%) students strongly agreed and 53 (28.8%) agreed. Cases/scenarios presented during the session were realistic and enabled students to understand the application of communication skills in real life where 129 (70.1%) students strongly agreed while 48 (26.1%) agreed. Attending the session helped students to gain confidence in applying communication skills and 99 (53.8%) students strongly agreed while 78 (42.4%) agreed. Communication skills such as empathy and active listening helped patients feel better and were understood by 116 (63.0%) students who strongly agreed and 60 (32.6%) students who agreed. Overall students attending the session were satisfied with the session where 124 (67.4%) students strongly agreed and 58 (31.5%)

agreed whereas only 1 (0.5%) student disagreed. The results show that students liked attending the session and more than 90% either strongly agreed or agreed to all the items (table 1).

Table 1: Feedback on AETCOM Session Content and Delivery

Feedback Statements	Response n (%)				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The session objectives were clearly explained.	134 (72.8%)	58 (31.5%)	1 (0.5%)	0	1 (0.5%)
The content was relevant to real-life clinical scenarios.	123 (66.8%)	58 (31.5%)	2 (1.1%)	0	1 (0.5%)
The session improved understanding of doctor-patient communication.	122 (66.3%)	61 (33.2%)	0	0	1 (0.5%)
The teaching methods (lectures, video, discussion) were effective.	134 (72.8%)	43 (23.4%)	5 (2.7%)	1 (0.5%)	1 (0.5%)
Able to participate actively in the session.	108 (58.7%)	64 (34.8%)	11 (6.0%)	1 (0.5%)	0
Faculty facilitated learning effectively.	129 (70.1%)	53 (28.8%)	1 (0.5%)	0	1 (0.5%)
Case scenarios used were realistic and helpful.	129 (70.1%)	48 (26.1%)	5 (2.7%)	1 (0.5%)	1 (0.5%)
Felt more confident in applying communication skills with patients.	99 (53.8%)	78 (42.4%)	6 (3.3%)	0	1 (0.5%)
Understood the importance of empathy and listening in patient care.	116 (63.0%)	60 (32.6%)	7 (3.8%)	1 (0.5%)	0
Overall, I am satisfied with the AETCOM communication session.	124 (67.4%)	58 (31.5%)	1 (0.5%)	0	1 (0.5%)

Discussion

The study presented evidence of an improvement in third professional (part I) medical student's comprehension of communication abilities due to AETCOM training session. When comparing mean scores between the pre-test and post-test, it was significantly higher in post test (pre test mean score: 6.36 ± 1.58 ; post test mean score: 8.61 ± 1.21). Therefore, we can conclude from this evaluation that short but structured instructional session may produce positive results with respect to student ability to learn/apply communicative concepts. These findings supports those reported from another study conducted in Maharashtra, as the results from an interventional study demonstrated statistically significant increases in students' communication skills across multiple core domains following completion of the AETCOM program.

According to students completing the AETCOM session, indicated that they understood the objectives of the AETCOM session; the content was applicable to clinical practice; and various teaching strategies used were effective for learning.

These findings are important because students learn communication skills much more effectively when they have an opportunity to relate communication to patient care rather than viewing communication as an abstract idea. In addition, similar results were reported from another study regarding perceptions of AETCOM by MBBS students. Students preferred to use case-based scenarios and role-playing to learn AETCOM-related information, and students felt that the AETCOM module assisted them in developing their communication skills as well as establishing positive doctor/patient relationships. Furthermore, a separate analysis of structured communication skills training revealed that participants' communication skills improved following training, and the structured training was reported beneficial by all participants involved in the study.^[7]

The positive response for videos and group discussions, and case scenarios suggests that this study also provides evidence that using interactive teaching methods, rather than lecture alone, is more effective for teaching communication. Previous studies have similarly demonstrated that students are more responsive to communication when taught by practical, learner-centered teaching methods. AETCOM module evaluation studies indicate that introducing structured communication training improves a student's understanding of patient-centered care while developing self-confidence to communicate with patients. Another study found that students believe communication skills are essential for being a good doctor and view the AETCOM module as a valuable component of the curriculum.^[8]

Students in this study reported feeling more self-confident about communicating with patients and a better comprehension of the importance of empathy, active listening, and respectful interaction after the session. Communication in medicine involves effective verbal communication and establishing trust and demonstrating care. The literature supports that effective communication enhances patient satisfaction, increases adherence to treatment, and improves clinical outcomes, thus establishing the necessity of these skills for each future doctor. Therefore, our study supports the body of evidence that communication training should begin early and continue to be reinforced throughout the entire medical education period.^[9]

A few students gave no opinion about taking an active part in the session due to being either too self-conscious or unsure of what other students thought about them, or they simply were very unaccustomed to group interactions. However, the balance of feedback was overwhelmingly positive, indicating that participants benefited from a suitable place to express themselves educationally. There are numerous studies on AETCOM indicating the improvement of professionalism and communication skills when adding AETCOM and that although many students felt overwhelmed when first introduced to a

new to the start of the first session while the post-test was conducted immediately after the last session using KoboToolbox on students' personal handheld gadgets.

Ethical consideration

The study commenced after approval obtained from Institutional ethical committee (SVNGMC/IEC Boi.Res/180/2025). Informed consent taken from participant prior study. Data confidentiality maintained.

Curriculum, must realise the value of AETCOM to their medical education. Due to this, AETCOM's sessions can be designed to continue to maximise student participation by delivering their curriculum via small groups, scenarios and role play.^[10]

In summary, the positive feedback and subsequent improvements in student performance demonstrate that AETCOM's sessions are a valuable part of undergraduate medical education. The improvements in knowledge, positive student feedback and increased student confidence in their ability to communicate clearly point toward the value of AETCOM's approach in the training of medical students since effective communication with patients is imperative and therefore AETCOM should not be treated as an adjunct but rather an integral part of the undergraduate medical curricula.^[11]

There are few strengths in the study. It included a sizeable group of students; third professional MBBS students provide an accurate picture of how they reacted to the AETCOM teaching event. Secondly, both increased knowledge and student's feedback were evaluated which removes bias toward one outcome measure only. Finally, the AETCOM event utilized a variety of instruction methodologies such as lecture, video, and group discussion on case scenario, creating an engaging and practical learning opportunity for students. Lastly, the students' evaluations were very positive; and thus, indicated that the event was relevant and satisfactory to them.

The study also had some limitations. It was conducted at one institution; thus, the results may not represent to other medical schools. It was also conducted immediately following the teaching event, indicating only short-term satisfaction responses and not long-term knowledge retention or real-world application. Additionally, the majority of the data relied on self-reported data from the students which could be subject to student mood, degree of satisfaction, or receptive bias. Finally, the study was limited to one specific AETCOM module 3.1 and may not be generalizable to all other AETCOM modules.

The results recommends that AETCOM should continue to be incorporated into the undergraduate program to achieve desired outcomes. All AETCOM sessions should have more interactivity with more case studies embedded in the interactive activities to make the students better able to apply the content in their clinical experience. Also, faculty

development is critical to successful AETCOM implementation because good facilitation by teachers can lead to enhanced student participation and improved student learning. Future projects should include multiple sites, a larger number of participants, and longitudinal follow-up studies to determine whether the learning is being retained and applied in clinical practice. Additionally, future studies could include assessing related patient outcomes to understand the overall effectiveness of AETCOM training.

Conclusion

Third professional MBBS Students responded positively to the AETCOM module 3.1 - Doctor patient communication session and felt that it enhanced their knowledge of communication skills. They found the session clear, practical and relevant to actual clinical practice, and appreciated the value of empathy and listening as part of being a good patient care provider.

The results indicate a need for additional sessions of this type within the medical curriculum. The AETCOM program will contribute substantially to the training of future physicians to be both knowledgeable, compassionate, ethical and effective communicators.

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