Teaching of AETCOM Modules in Physiology through Peer-assisted Learning: Feasibility Assessment Study

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ABSTRACT

Introduction and Background: Attitude Ethics and communication (AETCOM) teaching learning methodology needs to be innovative, informal and realistic. Internalization and actualization are important for having a long-term impact on their interactions with patients, relatives, and professional interactions with colleagues. Peer Assisted Learning (PAL) is an effective teaching and learning tool used extensively for various curricular components in medical education worldwide.

Objective: the purpose of the study was to find the feasibility of using PAL as teaching and learning modality to administer AETCOM module in Physiology.

Method: After approval from IEC, in this study first year MBBS students practiced peer assisted learning for AETCOM module in Physiology by 5 peer tutors and 45 peer tutees. Teachers role was to facilitate the PAL methodology learning and preparing the Peer tutors for smooth conduct of PAL sessions. Study participants were evaluated using pre-validated five point Likert scale, structured short answer questions for PAL and AETCOM based case scenario and feedback questionnaires.

Results: 42 MBBS students participated in the study. It was observed that peer tutees perceived PAL as interesting and innovative method for teaching and learning AETCOM module in Physiology. Open ended assessment showed that they had achieved desired score about understanding of the AETCOM module and PAL methodology. The feedback from facilitators also echoed the same with improvement in team learning behaviour and use of PAL technique not only for AETCOM but also for learning other curricular topics.

Conclusion: PAL can be used as novel teaching learning tool for AETCOM module in Physiology.

Keywords: AETCOM, Medical Education, Peer Assisted Learning, Physiology.

INTRODUCTION

The "Indian Medical Graduate" (IMG) should possess requisite knowledge, skills, attitudes, values, and responsiveness to function appropriately and effectively as a physician of first contact of the community while being globally relevant. This needs equal emphasis on ethics and professionalism.[1] Peer-assisted learning (PAL) is an effective teaching and learning tool used extensively for various curricula in medical education worldwide.[2] Most medical schools implement peer teaching programs by using students as teachers.[3] In pre-clinical medicine, PAL has been established in particular in anatomy,[4] physiology[5] and problem-based learning.[6] PAL is mutually beneficial for student tutors and student learners.[7] PAL helps the learners acquire cognitive, psychomotor and affective domain development and increase self-confidence, autonomy, clinical reasoning, self-evaluation, and peer collaboration.[8] The student tutors get the role of teacher with improving their individual knowledge, skills and attitudes, along with increased proficiency in interaction and leadership competencies. This may be helpful not only in further undergraduate medical education but also in postgraduation programs, and faculty assignments. Some studies express a better ability to relate to peer groups as 'social and cognitive congruence' between student tutors and student learners. This facilitates informal and empathic communication and the establishment of a learning environment that encourages an open exchange of ideas and student learners' personal

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concerns.[9] The term 'cognitive congruence' refers to the assumption that student tutors and student learners are likely to share a similar knowledge base and learning experiences; they are on the same wavelength. This could mean that student tutors think of explanations that are more likely to meet the student learners' needs and, therefore, easier to understand. Thus, cognitive congruence could compensate for peer-teachers' lack of knowledge and expertise compared to more experienced teaching staff.[10]

Attitude Ethics and communication (AETCOM) teaching learning methodology needs to be innovative, informal and realistic.[11] Tradition method like a theory lecture for teaching AETCOM modules for teaching virtues associated with health care are generally not liked by students and they may feel it as monotonous or boring. Currently, different methods are being tried to teach AETCOM. It's feedback from stakeholders

that the student learns for the sake of attending it and not being actively attended with interest. Thus, in this way, the whole purpose of AETCOM for better health care delivery to have an affective component for shared decision making will be not be sub-served well as intended. There is difficulty in continuous engagement and improving understanding is a challenge while teaching AETCOM modules. Internalization and actualization are important for having a long-term impact on their interactions with patients, relatives, and professional interactions with colleagues. The present study was conducted to find out the feasibility of Peer Assisted Learning (PAL) as an effective tool for teaching AETCOM in the Physiology class to improve healthcare delivery.

MATERIALS AND METHODS

Phase I MBBS students (n=50) were included in the study. They were divided in five groups of nine each. There was a common briefing of five peer tutors selected by voluntary nomination and Physiology faculty members as facilitators for each PAL study group. AETCOM module for Physiology was be selected as per the AETCOM booklet. The facilitators were briefed about PAL methodology and AETCOM module to used for the study in two separate structured sessions. The facilitators briefed the selected peer tutors for the PAL methodology and the chosen PAL topic as per the NMC AETCOM module over a period of two weeks in a formal session and an informal session for doubts related to all aspects of the study methodology. The peer leaders then took formal/informal sessions for his/her group over a period of 4 weeks. Then at the end of the session, they were assessed, and feedback was collected for various objectives such as overall understanding of PAL methodology as a teaching learning tool, using the PAL methodology for learning AETCOM, the overall effect of use of PAL on the team learning behaviors and communication skills of students, and use of the PAL methodology for learning other topics by the students. The data collection tools were a pre-validated five-point Likert scale, structured short answer questions (SAQ), and a feedback questionnaire for the AETCOM module components and PAL methodology.

The scores of 5-points Likert scale[12] were calculated and expressed as percentages of student giving particular responses for an individual item of the Likert Scale. To ensure objectivity apart from the attitudinal response, we have kept SAQ for AETCOM module assessment and case scenario as suggested for teaching and assessment in the AETCOM booklet. The SAQ were evaluated and scored by two independent facilitators and average score was calculated. SAQ score of >70% of the maximum possible score was considered satisfactory learning of a given AETCOM module. The feedback was also collected from all stakeholders of the study and analyzed. Data analysis was done using online software GraphPad Prism version 7.1. The institutional ethics committee approved the study as per

letter number O.W.NO/AIIMS.RAJKOT/03/2021 dated 15th September 2021 and prospectively registered in Clinical Trial Registry of India (CTRI) Database as per reference number CTRI/2021/09/036923.

RESULTS

Out of 45 participants, 42 completed the study in 90% of teaching, learning, assessment and feedback sessions. 3 students were excluded due to partial participation and absence in required interaction sessions in the study. Mean age was 20 years, 25% were female. None of the students had any kind of exposure with such kind of Teaching learning methodology and its assessment in any of the MBBS professional subjects or elsewhere.

Pre- and Post-test Assessment

Overall, students understood and valued the importance of AETCOM and the AETCOM module. Total of 36 students completed both the pre- and post-tests that evaluated their knowledge of important aspects of doctor-patient relationship as component of the given AETCOM module. 86% of students understand that we get some privileges by becoming better doctor. 91% of students feel that they should always look at the patient from a holistic point of view. 91% of students understand that there are some duties and responsibilities toward society as a doctor. 89% of students feel that they should always respect patient's autonomy in clinical encounters. 94% of students feels that lifelong learning is an important aspect of student's life. 94% of students feel that treating all patients with equanimity is important for clinical practice. 75% of students feel that they understand the difference between illness and disease. Here, 83% feel a difference between healing and curing, 97% of students feel that honesty and transparency are important for effective doctor-patient relationship, 94% feel that empathetic responses to patients opens up better history, 94% feel that understanding and respecting patients encourage good patient-doctor relationship in communications, 91% understood the importance of listening for developing good understanding of the patients.

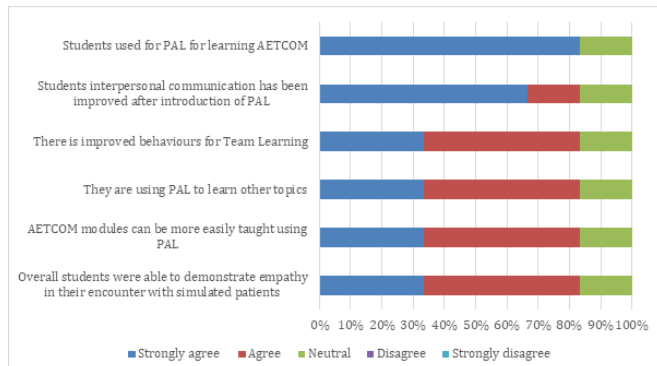### Faculties' Perceptions of Peer Teaching

As for the faculties' perceptions of the teaching and mentoring experience, 83.4% reported that PAL significantly impacted the students' confidence in their presentation skill and interpersonal communication. 83.3% reported that they observed an improved understanding and behavior of teamwork and roles within the team along with the fact that students are using PAL to learn other topics. Furthermore, they reported that AETCOM modules could be more easily taught using PAL and students were able to demonstrate empathy in their encounters with simulated patients. Overall "having better interpersonal communication skills" was the most frequently reported strength. (Graph 1)
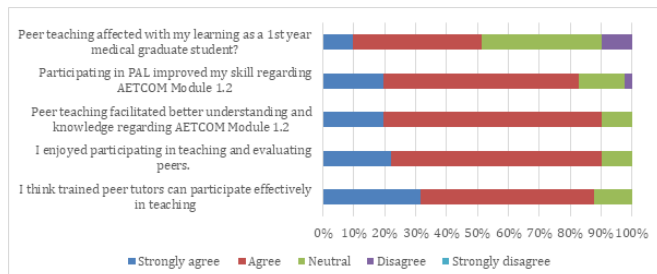
Peer Tutor Feedback of PAL for AETCOM Study

Regarding the peer tutor and tutee feedback, 90.2% agreed that Peer teaching facilitated better understanding and knowledge regarding AETCOM Module 1.2. Most of the participants (82.9%) thought that participating in PAL had created a welcoming learning environment and improved their skill. In general, 90.3% felt that they generally and adequately benefited from this experience/opportunity and PAL is an effective teaching strategy. (Graph 2)

Open-ended Assessment (SAQ) on AETCOM Module

To objectively assess the cognitive domain of AETCOM module understanding set of questions was asked as open-ended structured SAQ. 32 students completed this open-ended assessment and >95% scored above 70%. When asked about "What do you understand by peer-assisted learning", the answers were mainly focused on "learning from peer" along with "ease and convenience" of learning from peer, "better communication with peer", "something that enriches communication and teamwork skills, Better understanding, Develops problem-solving skills, Build Positive attitude". Further, they felt that "its gives opportunity to play teachers role and improves understanding"

Graph 1: Faculty perceptions of Peer teaching (Likert score)

Graph 2: Peer Tutor and Tutee Feedback of PAL for AETCOM study (Likert score)

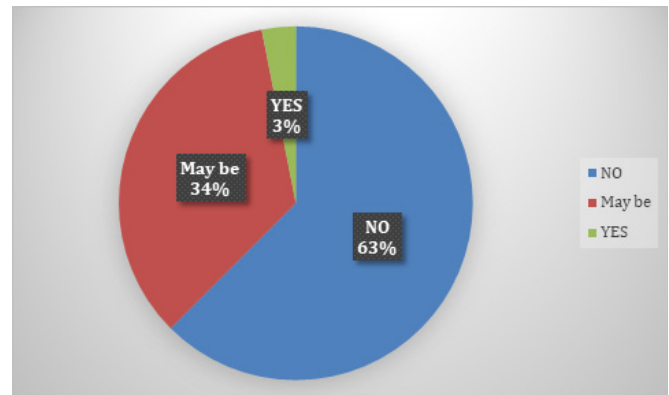**Table 1:** Case-scenario evaluation (scoring value 1-3 as per the relevance)

Question	Mean	SD
What do you feel about "Trust" in the doctor-patient relationship.	1.98	0.67
In the given case what are the rights of a patient, and what should be the duties of a doctor.	2.54	0.71

Open ended Assessment (SAQ) on AETCOM module Case scenario

32 students who completed the open ended SAQ assessment showed >90% of students scored above 66% and 84.3% in two descriptive questions. The questions asked were trust in doctor-patient relationship and patient rights with doctor duties (Table 1). The answers involved a variety of replies with all round understanding of these concepts. 63 % of students said "No" to a given question on second opinion: "Does the request for a second opinion provide sufficient grounds to terminate the doctor-patient relationship? (Graph 3)

DISCUSSION

All over world, educationists widely acknowledge the relevance and need of CBME.[13] Graduate Medical Education Regulation (GMER) 2019 was a recent significant change in Indian scenario for the MBBS degree course with emphasis on Competency Based Medical Education (CBME). There was a smooth roll-out plan, Curriculum Implementation and Support Program (CISP-I and II) by then Medical Council of India (MCI) and now National Medical Commission (NMC) of India to ensure that Indian Medical Graduate (IMG) complete on all fronts including virtues of good Clinician, Leader, Professional, Lifelong learner and Communicator. The need to have formal inclusion of professionalism and communication skills with appropriate competency in place was due to the previous method of non-formal education through "hidden curriculum". These virtues were "caught" by students rather than "taught" formally to them. This led to various issues on the professional front and while imparting health care

Graph 3: Case scenario question: "Does the request for a second opinion provide sufficient grounds to terminate the doctor-patient relationship?"

Table 2: SAQ PAL evaluation (scoring value 1-3 as per the relevance)

Variables as Questionnaire	Mean	+SD
What are the Duties of doctors	2.5	0.69
What should be the Professional qualities of a doctor	2.375	0.7
What do you understand by peer assisted learning	2.11	0.77
What is empathy? and what is its importance in patient care	2.54	0.68
What is difference between healing and curing	2.71	0.45

to patients and partially fuelled directly or indirectly the enumerable incidents between patient and patient relatives with hospitals and healthcare personnel's. MCI and the NMC, India, gave due importance to it and introduced Attitude Ethics and Communication (AETCOM) in GMER -2019 [11]. Considering its content of various principle of bioethics along with communication skills, the teaching-learning methods needs to be more interactive. There are various methods suggested in AETCOM booklet, including role play, case-based learning, and focused group discussions apart from traditional methods. Communication remains have a central place in AETCOM, which paves the way to positively learn and imbibe the virtues[11].

Considering these facts, while teaching AETCOM modules, there was a need of a method involving more communication skills among the medical students. PAL has been a well-accepted teaching-learning tool echoed in the current study as seen from inputs from peer tutors, peer tutees, and facilitators [6]. Other offshoots of PAL sessions were also observed in our study such as improved communication skills and team learning, including "social" and "cognitive" congruence. Faculty perception showed more interactivity among students while learning, which agreed of better impact on students confidence in presentation skills and interpersonal communication skills. The addition of AETCOM competencies has been a strategically driven and need-based move by National Medical Commission considering health care education and healthcare delivery system in India. Attitudinal component and ethical communication with patients and professional colleagues has been introduced formally in the new curriculum as per GMER 2019 [11]. Various teaching-learning methods have been suggested to implement AETCOM Module with the perceived challenge of positive student engagement for successful internalization and its true reflection in healthcare delivery. This is a similar perception of faculty as seen in the study about use of novel dedicated teaching-learning methods to impart AETCOM have to be done across all phases starting with Phase 1, i.e., First Professional MBBS following the AETCOM module.[14] Considering the advantages of PAL, in the current study, we proposed and successfully used PAL as a tool for teaching AETCOM module in Physiology [11]. Based on the assessment, our study shows that the students were happy with using PAL for AETCOM, and the assessment showed successful learning of the module as seen by majority of students scoring the agree or strongly agree response. In a case scenario regarding decision making or viewpoint for the given situation, there is nothing correct or wrong in bioethics but the sense of shared decision making is more vital in healthcare delivery, this was too observed from there range of responses from participants with varied possibilities according to individual from available options.[15] Further, it was observed that students like to use this PAL methodology further for learning other AETCOM modules and other topics of their current curriculum. As suggested by Kapoor A, and as seen from our results, majority of the participants "strongly agree" with the implementation of AETCOM as a part of the undergraduate curriculum.[16]

Limitation of Study

The study participant could have been more, which was not possible in current setting for us. Control group with traditional method compared with PAL method would have been ideal methodology, which was not feasible for us at present study settings. Long-term objectives of reflection in actual practice, cannot be completed due to current duration of study.

Acknowledgements

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