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Original Research Article

Interventional study on effectiveness of attitude, ethics and communication module in improving communication skills of undergraduate medical students in Maharashtra

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ABSTRACT

Background: Attitude, ethics, and communication are key attributes in the doctor-patient relationship and to strengthen these qualities, the National Medical Commission in India, has introduced a course called attitude, ethics and communication (AETCOM) in the undergraduate medical curriculum. This study aims to assess the baseline level of communication skills of third year MBBS students in Maharashtra and also evaluate the effectiveness of the AETCOM module in improving their communication skills.
Methods: An interventional study was conducted among 240 third year MBBS students from six medical colleges in Maharashtra over a period of seven months. Students' communication skills in seven core communication competencies were assessed before and after the implementation of the intervention, in the form of AETCOM communication skills training module, using a Kalamazoo essential elements communication adapted (KEECC-A) checklist. The difference in the means of pre-intervention scores and post-intervention scores were analyzed for statistical significance using 'paired t-test' ('p' value <0.05 considered significant).
Results: Post-intervention, there was a highly significant improvement in total mean communication skills score of students to 94.4 (SD of 19.3) from the pre-intervention total mean communication skills score of 54.89 (SD of 11.55) and the difference was statistically significant. The statistically significant improvement was observed in all the seven core communication competencies assessed using KEECC-A checklist.
Conclusions: The AETCOM module demonstrated significant effectiveness in improving communication skills among undergraduate medical students in Maharashtra.

Keywords: Communication skills, Assessment, Kalamazoo, AETCOM module, Medical students

INTRODUCTION

Good communication skills are considered as essential components of physician's training. Effective doctor-patient communication has been shown to enhance patient satisfaction, compliance with treatment, medical decisions and outcomes. Effective communication between the doctor and the patient leads to better compliance to suggested lifestyle changes and treatment, better health outcomes, decreased legal conflicts and higher satisfaction both for doctors and patients.[1-3]

Medical students' interpersonal and communication skills are considered as the fundamental dimension of their clinical competence.[4] Hence, the acquisition of communication and interpersonal skills is recognised and documented as a core competency for medical students' training in many countries.[5-7] Various studies have also

proved that educational interventions in the form of interactive workshops, interviews of simulated patients, role modelling, role-play, videotape review, and skills practice can enhance the skills of students in communicating with patients.[8,9] In India also, the National Medical Commission (NMC), formerly the Medical Council of India (MCI), has also recognised the importance of communication skills as one of the core competencies that a medical student must acquire during training to function as a competent healthcare professional. Attitude, ethics, and communication are key attributes in the doctor-patient relationship and to strengthen these qualities, the NMC has introduced a course called attitude, ethics and communication (AETCOM) in the undergraduate medical curriculum, through which relevant soft skills are taught to undergraduate medical students under different phases of teaching. The NMC expects a medical student to be competent enough in communicating with the patients adequately, affectively, sensitively and respectfully. The NMC has implemented competency based medical education (CBME) curriculum for undergraduate medical students from August 2019.[10]

There is a relative lack of research on the effects of AETCOM modules on communication skills training offered to the undergraduate medical students in medical colleges of Maharashtra. Recognising the critical need to address this gap, the current study embarks on an AETCOM module-based communication skills training aimed at enhancing communication skills of medical students.

The study's objectives include assessing baseline level of communication skills of medical students and evaluating the AETCOM module-based communication skills training intervention's impact on enhancing their communication skill levels. By evaluating the impact of AETCOM module-based communication skills training, this research aspires to contribute to evidence-based policies and interventions that contributes towards refinement in AETCOM module.

METHODS

The institutional ethical committee's approval was obtained for this interventional study consisting of a pre-intervention assessment, intervention in the form of AETCOM module sessions and post-intervention assessment, conducted among undergraduate medical students in Maharashtra. The study was conducted over a period of seven months, from 01 March 2024 to 30 September 2024, within selected medical colleges in Maharashtra. The third year MBBS undergraduate medical students, willing to participate in the study were eligible for inclusion in the study. Exclusion criteria included unwillingness to participate and failure to attend all sessions in four weeks of communication skills training.

A purposive convenience sample consisting of 240 medical students in third year MBBS was used in this study. The reason for selecting the third year MBBS students was that these students would have just started with their clinical postings and this type of training would benefit them in performing better in clinical case taking. One medical college was randomly selected from each of the six revenue divisions of Maharashtra, ensuring representation from both rural and urban areas of Maharashtra. A total of 40 participants were enrolled from each selected medical college using systematic random sampling. Sociodemographic data of study participants was collected on a semi-structured questionnaire, based on modified Kuppuswami scale 2019.

Pre- and post-intervention assessment of communication skills of medical students was carried out by the trained observers using the Kalamazoo essential elements communication adapted (KEECC-A) checklist assessment tool for seven core communication competencies (builds a relationship, opens the discussion, gathers information, understands the patient's perspective, shares information, reaches agreement, provides closure) and it was rated using a 5-point Likert scale (1-poor to 5-excellent). Thus, a total of 24 competencies related to communication skills (each competency scored 1 to 5; a total score of 24 to 120) were assessed. The intervention in the form of AETCOM module sessions on 'The foundations of communication - 1 and 2' were implemented on the study participants, for a duration of five hours weekly over four weeks.

The data was compiled and statistical analysis was done with statistical package for the social sciences (SPSS) 20.0 statistical software. Paired t-test was used to assess the difference in assessment scores before and after intervention. Significance level $p<0.05$ was considered statistically significant.

RESULTS

A total of 240 third-year MBBS students participated in this interventional study, with a mean age of 21±1.9 years. Table 1 shows the socio-demographic characteristics of study subjects. Out of all participating students, 110 (46%) were male and 130 (54%) were female. A majority of participants in the study belonged to Hindu religion (66.28%) and participating students were divided as per their socioeconomic class based on modified Kuppuswami scale, as shown in Table 1.

Before giving communication skills training, the total mean communication skills score of students was 54.89 (SD of 11.55), and after training, that significantly improved to 94.4 (SD of 19.3) ($p<0.05$). It has been observed that there was no statistically significant difference in the mean pre-test scores between male and female students with regard to communication skills in our study. Table 2 illustrates the significant improvement in communication skills post-intervention of AETCOM training sessions.

Table 1: Socio-demographic characteristics of study participants.

S. no.	Demographic variables	N (n=240)	Percentage (%)
1	**Age (in years)**		
i	20-21	24	10
ii	21-22	198	82.5
iii	22-23	18	7.5
2	**Gender**		
i	Male	110	46
ii	Female	130	54
3	**Type of medical college**		
i	Government	80	33.3
ii	Private	160	66.7
4	**Location of medical college**		
i	Urban	160	66.7
ii	Rural	80	33.3
5	**Religion**		
i	Hindu	182	75.8
ii	Muslim	22	9.2
iii	Others	36	15
6	**Socioeconomic status**		
i	Upper class	124	51.7
ii	Upper middle	55	22.9
iii	Lower middle	24	10
iv	Upper lower	19	7.9
v	Lower class	18	7.5

Table 2: Communication skills competency among medical students.

S. no.	Communication skills competency	Before training mean score (SD)	After training mean score (SD)	P value
A	**Builds a relationship**			
1	Greets and showing interest in the patient as a person	2.75 (1.09)	4.55 (1.14)	0.0001
2	Using words that show care and concern throughout the interview	2.43 (1.05)	4.20 (0.96)	0.0001
3	Using tone, pace, eye contact, and posture that show care and concern	3.10 (0.89)	4.60 (0.88)	0.0002
4	Responding explicitly to patient's statements about ideas and feelings	2.30 (0.74)	3.69 (0.73)	0.0003
B	**Opens the discussion**			
5	Allowing the patient to complete opening statement without interruption	2.50 (0.76)	4.60 (0.59)	0.0001
6	Asking "is there anything else?" to elicit a full set of concerns	3.25 (0.90)	4.26 (1.11)	0.0089
7	Explaining and/or negotiating an agenda for the visit	2.30 (0.80)	3.06 (1.40)	0.0324
C	**Gathering information**			
8	Beginning with patient's story using open-ended questions	3.00 (1.11)	4.55 (0.60)	0.0002
9	Clarifying details as necessary with more specific or "yes/no" questions	2.65 (0.86)	4.64 (0.86)	0.0001
10	Summarising and giving patient opportunity to correct or add information	2.30 (0.94)	3.86 (1.45)	0.0003
11	Transitions effectively to additional questions	2.26 (0.80)	3.69 (0.40)	0.0002
D	**Understanding the patient's perspective**			
12	Asking about life events, circumstances, other people that might affect health	2.70 (1.09)	3.75 (1.30)	0.0078

Continued.

S. no.	Communication skills competency	Before training mean score (SD)	After training mean score (SD)	P value
13	Asking patient's beliefs, concerns, and expectations about illness and treatment	2.26 (1.02)	3.41 (1.20)	0.0023
E	**Sharing information**			
14	Assesses patient's understanding of problem and desire for more information	2.20 (0.99)	4.03 (1.25)	0.0001
15	Explaining using words that patient can understand	3.20 (1.10)	4.66 (0.78)	0.0002
16	Asking if the patient has any questions	2.05 (0.76)	3.13 (1.40)	0.0012
F	**Reaching an agreement**			
17	Including patient in choices and decisions to the extent s/he desires	1.95 (0.87)	4.15 (1.33)	0.0001
18	Checking for mutual understanding of diagnosis and/or treatment plans	1.75 (0.64)	4.30 (1.38)	0.0001
19	Asking about patient's ability to follow diagnostic and/or treatment plans	1.65 (0.55)	3.86 (1.50)	0.0001
20	Identifying additional resources as appropriate	1.45 (0.61)	3.06 (1.54)	0.0001
G	**Providing closure**			
21	Asking if patient has questions, concerns, or other issues	1.71 (0.73)	3.30 (1.23)	0.0001
22	Summarising	2.05 (0.63)	4.75 (1.68)	0.0001
23	Clarifying the follow-up or contact arrangements	2.10 (0.74)	4.09 (0.94)	0.0001
24	Acknowledging patient and closes interview	1.50 (0.70)	3.13 (1.29)	0.0001
	Total score	54.89 (11.55)	94.4 (19.3)	0.00001

DISCUSSION

Our study demonstrates a substantial improvement in communication skills of third-year MBBS study participants, post-intervention of AETCOM communication skills training sessions. Various studies have shown that there has been a significant improvement in communication skills among undergraduate medical students, interns as well as post-graduate medical students after the implementation of communication skills training modules. The findings of the current study are similar to a study by Brahmbhatt and Lodhiya K in the Department of Community Medicine of a medical college of Junagadh, India, who reported a significant improvement in self-assessment of communication competence of third-year MBBS students after training.[11] A study by Hausberg et al also reported a significant improvement in pre- and post-training communication skills through self-assessments by psychosocial medicine students, which is similar to the results of present study.[12] Results of a study by Tanwani et al, among second year MBBS students at Indore reported that 96.43% of the students agreed that a course on special basic communication skills training had improved their communication skills with the patients.[13] Similar findings were also found by Jagzape et al, in their observational study at Wardha, which reported a 78.46% improvement in communication skills experienced by the undergraduate medical students.[14] A study at tertiary care teaching hospital of Kolkata found that 95% of the interns felt that the communication skills training led to the improvement of their knowledge, rapport building and information eliciting capacity.[15] In an interventional study carried out on 377 post-graduate medical students, from randomly selected medical colleges of Maharashtra during 2017-2019, a significant difference in the pre- and post-test scores for quantified knowledge in relation to training in communication skills ($p<0.0001$) was noted, and also significant difference in the pre- and post-test scores for quantified knowledge in relation to basic doctor-patient relationship was noted suggesting that the intervention was effective in improving the communication skills.[16]

A communications curriculum instituted in 2000-2001 at three US medical schools was evaluated with objective structured clinical examinations (OSCEs) by Yedidia et al. This study concluded that communications curricula using an established educational model significantly improved third-year students' overall communications competence, as well as their skills in relationship building, organization and time management, patient assessment and increased clinical competence.[17] In a study done by Joekes et al at UK medical school, where students received a curriculum that included communication skills training integrated into a professional development vertical module, noticed that students receiving the professional development training showed significant improvements in certain communication skills and achieved higher ratings for use of silence, not interrupting the patient, and keeping the discussion relevant, compared to students receiving the traditional curriculum.[18]

Based on the available medical literature, there was not a single study available which have shown that AETCOM communication skills training sessions do not substantially improve the communication skills of third-year MBBS students.

In our study, we have not observed any statistically significant difference in the mean pre- and post-intervention scores between male and female students with regard to communication skills. These findings are similar to the results of the study conducted by Ibrahim et al wherein there was no statistically significant difference noticed in communication skills between male and female post-graduate medical students ($p>0.05$).[19] Also, it was observed in a module based interventional study conducted among the medical interns posted in medical college at Kanchipuram (Tamil Nadu) that there was no significant difference in the mean pre-test scores between male and female interns with regard to various competencies in communication.[20] Contrastingly, few studies have shown that communication skills of female medical students are better than the male students and the difference is statistically significant.[11,21,22]

In our study, assessment of communication skills of medical students was carried out by the trained observers using the Kalamazoo Essential elements communication checklist adapted (KEECC-A) assessment tool. The reason for using KEECC-A assessment tool was its capability of being used by multi-rater of different specialties and it has also been found to be valid and reliable.[23] Internationally, different models of communication skills assessment has been used in different studies related to communication skills assessment of MBBS students from the first to final semester, interns as well as post-graduate medical students. Chavda et al in their study used KEECC-A for training and assessing the fifth semester MBBS students, Dutta et al used SEGUE framework in interns, Nayak and Kadeangadi used KEECC in third year MBBS students, Choudhary and Gupta trained fourth year MBBS students according to Calgary-Cambridge guide format and so on.[15,24-26]

Limitations

Our study has certain notable limitations. The use of purposive convenience sampling and the inclusion of only third-year MBBS students from six medical colleges in Maharashtra limits the generalisability of the findings to other medical student populations and regions. The study's relatively short duration of seven months may not capture long-term retention of communication skills. Additionally, the assessment was conducted immediately after the intervention, without any follow-up evaluation to determine if the improvements in communication skills were sustained over time. The use of trained observers for assessment, while standardized through the KEECC-A checklist, could potentially introduce observer bias. The study also did not include a control group, which makes it difficult to definitively attribute the improvements solely to the AETCOM module intervention versus other factors. Furthermore, the study did not account for potential confounding variables such as previous communication training, individual personality traits, or concurrent clinical exposure that might have influenced the students' communication skills development.

CONCLUSION

The intervention in the form AETCOM module on communication skills has demonstrated significant effectiveness in improving communication skills among third-year MBBS students in Maharashtra. Statistically significant improvements were observed across all seven core communication competencies assessed using the KEECC-A checklist, including relationship building, discussion opening, information gathering, understanding patient perspective, information sharing, reaching agreement, and providing closure. This evidence supports the value of implementing AETCOM modules in undergraduate medical education for enhancing doctor-patient communication skills.

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