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Original Research Article

Empathy and equanimity toward caregivers: a pre-post study on AETCOM module 2.8 in phase II MBBS students

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ABSTRACT

Background: Empathy and equanimity are essential competencies in medical education, influencing patient outcomes and caregiver engagement. The attitude, ethics, and communication (AETCOM) module introduced by the National Medical Commission aims to cultivate these attributes among undergraduate medical students; however, empirical evidence of its effectiveness remains limited. Aim was to evaluate the impact of AETCOM Module 2.8 on empathy and equanimity toward caregivers among phase 2 MBBS students using a pre-post study design.
Methods: This pre-test/post-test study included 89 phase 2 MBBS students (88 completed post-test). The intervention comprised interactive sessions including discussions, role-plays, and reflective exercises. A validated Likert-scale questionnaire assessed four domains: understanding caregivers' challenges, communication and professionalism, equanimity and emotional self-management, and overall empathy. Quantitative data were analysed using paired t-tests, while qualitative reflections underwent thematic analysis.
Results: Overall empathy scores increased significantly from 57.9±8.63 to 62.7±7.21 ($p<0.001$). Significant improvements were observed in understanding caregivers' challenges (+1.3), communication and professionalism (+0.9), and equanimity (+1.3) (all $p<0.001$). Neutral and negative responses decreased by over 35%. Qualitative reflections highlighted increased awareness of caregivers' holistic burdens and a commitment to empathetic, composed clinical interactions.
Conclusions: AETCOM module 2.8 significantly enhanced empathy and equanimity among MBBS students. Integrating interactive and reflective learning approaches within medical curricula can foster compassionate, professional, and emotionally resilient future physicians.

Keywords: Empathy, Equanimity, Caregivers, AETCOM, Medical education

INTRODUCTION

Empathy and equanimity are increasingly recognized as essential attributes in modern medical practice. Empathy-the ability to understand and respond to the emotions and perspectives of others-enhances patient trust, communication, satisfaction, and clinical outcomes.[1-13] Equanimity, defined as emotional balance and composure during stressful or emotionally charged situations, complements empathy by enabling healthcare professionals to provide compassionate care while maintaining objectivity and preventing burnout.[2,15]

Despite their importance, several studies have documented a decline in empathy among medical students as they progress through clinical training, attributed to academic pressure, emotional fatigue, and increasing workload.[3] Equanimity serves as a protective factor, allowing clinicians to sustain empathy without emotional exhaustion and compassion fatigue.[4]

To address affective domain competencies, the National Medical Commission introduced AETCOM modules within the competency-based curriculum.[5] AETCOM module 2.8 focuses on empathy and equanimity toward caregivers using experiential learning strategies. However, structured evaluation of both empathy and equanimity-particularly toward caregivers-remains limited in the context of module 2.8, with most studies focusing primarily on empathy alone.

Objectives

Objectives were to compare pre-test and post-test empathy scores toward caregivers among phase 2 MBBS students, to assess changes in students' understanding of caregivers' emotional, physical, social, and financial challenges, to evaluate changes in empathetic communication and professionalism during caregiver interactions, to assess improvement in equanimity and emotional self-management following the intervention and to analyse students' reflections regarding the influence of the AETCOM session on future clinical practice.

METHODS

Study design and ethical approval

A pre-test and post-test interventional study was conducted at ESIC Medical College and Hospital, Faridabad, from July 2025 to August 2025, which included intervention, delivery and assessment.

Study setting and participants

The study was conducted among phase 2 MBBS students using convenience sampling. Eighty-nine students participated in the pre-test, and 88 completed the post-test. Participants included both genders and were predominantly aged 20-21 years.

Intervention

The intervention comprised AETCOM module 2.8, delivered through interactive teaching-learning methods including group discussions, role-plays, and reflective exercises. The sessions focused on: Understanding caregivers' multifaceted challenges, developing empathetic and professional communication and practicing equanimity and emotional regulation during caregiver interactions.

Tools for data collection

A structured, pre-validated questionnaire assessed four domains: understanding caregivers' challenges, communication and professionalism, equanimity and emotional self-management, and overall empathy. Responses were recorded on a five-point Likert scale. Post-test qualitative reflections were also collected.

Data collection procedure

The pre-test was administered before the AETCOM session. The post-test questionnaire and qualitative reflections were collected after completion of the module.

Data analysis

Quantitative data were analysed using SPSS software. Descriptive statistics summarised demographic variables. Paired t tests compared pre-test and post-test scores, with statistical significance set at $p<0.05$. Qualitative responses were analysed using thematic analysis.

RESULTS

Demographic profile of participants

A total of 89 phase 2 MBBS students participated in the pre-test, with 88 completing the post-test assessment. The majority of participants were aged between 20 and 21 years, reflecting the typical demographic profile of students in this phase of training. Gender distribution was balanced, with a slight predominance of female students in the post-test group. Detailed demographic characteristics are presented in Table 1.

Overall empathy scores

Comparison of pre-test and post-test overall empathy scores demonstrated a statistically significant improvement following the AETCOM module 2.8 intervention. The mean empathy score increased from 57.9±8.63 in the pre-test to 62.7±7.21 in the post-test (paired $t=-7.12$, $p<0.001$), indicating a meaningful enhancement in students' empathetic attitudes toward caregivers. These findings are summarized in Table 2.

Domain-based empathy, communication, and equanimity scores

Domain-wise analysis revealed statistically significant improvements across all assessed domains after the intervention. Scores related to understanding caregivers' challenges increased by a mean of 1.3 points, communication and professionalism improved by 0.9 points, and equanimity with emotional self-management improved by 1.3 points. The overall empathy score showed a mean increase of 4.8 points. All domain-wise improvements were statistically significant ($p<0.001$). Detailed comparisons of pre-test and post-test domain scores are presented in Table 3.

Item-wise changes in empathy, communication, and equanimity

Item-wise analysis demonstrated a consistent increase in proportion of students agreeing or strongly agreeing with statements related to empathy, professional communication, and equanimity following intervention.

Notable improvements were observed in students' understanding of caregivers' emotional stress and impact of caregiving on personal life, both reaching statistical significance. Improvements were also noted in confidence in empathetic communication, maintaining professionalism with distressed caregivers, remaining calm during interactions, and sustaining empathy without emotional overwhelm, although some item-level changes did not reach statistical significance. Collectively, these findings indicate positive shift in students' perceptions and attitudes across all domains (Table 4). In addition, neutral and disagree responses across empathy-related items declined by over 35% in post-test, reflecting clear movement toward positive empathetic attitudes following AETCOM intervention.

Qualitative findings from student reflections

Thematic analysis of post-test qualitative reflections revealed three dominant themes. The most frequently reported theme was increased awareness of the holistic burden faced by caregivers, encompassing emotional, physical, social, and financial challenges. A second prominent theme was a commitment to empathetic communication and active involvement of caregivers in patient care and decision-making. The third theme highlighted the importance of maintaining composure and professionalism while managing emotionally challenging clinical interactions. These themes, along with representative illustrative quotes, are presented in the Table 5.

Table 1: Demographic profile of participants.

Demographic variables	Category	Pre-test, (n=89)	Post test, (n=88)
Age (in years)	19	20 (22.5%)	19 (21.6%)
	20	26 (29.2%)	19 (21.6%)
	21	34 (38.2%)	35 (39.8%)
	22+	9 (10.1%)	15 (17.0%)
Gender	Male	43 (48.3%)	36 (40.9%)
	Female	46 (51.7%)	52 (59.1%)

Table 2: Comparison of overall empathy scores (pre-test vs. post-test).

Test phase	N	Mean score (out of 75)	SD	Paired t test	P value
Pre-test	88	57.9	8.63	t=-7.12	<0.001
Post-test	88	62.7	7.21		

Table 3: Comparison of overall and domain-based scores (Pre-test vs post-test).

Domains	Pre-test mean (SD)	Post-test mean (SD)	Mean difference	95% CI	P value
Overall empathy score	57.9 (8.63)	62.7 (7.21)	4.8	3.47-6.13	<0.001
Understanding caregivers' challenges	15.8 (2.51)	17.1 (2.12)	1.3	0.83-1.77	<0.001
Communication and professionalism	11.4 (2.30)	12.3 (1.99)	0.9	0.48-1.32	<0.001
Equanimity and self-management	15.0 (2.64)	16.3 (2.32)	1.3	0.83-1.77	<0.001

Table 4: Item-wise changes in empathy, communication, and equanimity domains (pre-test vs post-test).

Domains	Item (Abbreviated)	Pre-test agree (%)	Post-test agree (%)	P value
Understanding challenges	Understand emotional stress of caregivers	82	89.8	0.045
	Understand impact on personal life	83.1	90.9	0.042
	Recognize physical strain	83.1	89.8	0.112
	Aware of financial burdens	80.9	87.5	0.121
Communication and professionalism	Confident in empathetic communication	73	81.8	0.072
	Maintain professionalism when caregivers are distressed	77.5	85.2	0.097
	Identify caregiver burnout	83.1	89.8	0.112
Equanimity and emotional management	Remain calm and composed	77.5	85.2	0.097
	Personal emotions do not interfere with decisions	80.9	87.5	0.121
	Maintain empathy without becoming overwhelmed	77.5	84.1	0.143
	Listen without becoming defensive	79.8	85.2	0.203

Table 5: Thematic analysis of qualitative reflections (post-test).

Theme	N	Illustrative quote (Paraphrased)
Holistic burden of caregivers	65%	"Caregivers face emotional, physical, and financial stress that affects their lives deeply."
Empathetic communication and involvement	70%	"I will listen patiently and involve caregivers as partners in care."
Composure and professionalism	40%	"I will stay calm, manage emotions, and remain professional in difficult situations."

DISCUSSION

This study demonstrated that AETCOM module 2.8 significantly improved empathy and equanimity among phase 2 MBBS students. The observed improvement in overall empathy scores (mean increase of 4.8 points) is comparable to previous studies such as Kumar et al and Shapiro et al which reported significant enhancement in empathy following structured educational interventions.[7,8,14] Recent literature on competency-based medical education in India further supports the role of AETCOM modules in strengthening affective domain competencies among undergraduate medical students.[17]

Experiential learning approaches, including role-play and reflective exercises, have consistently been shown to enhance empathetic engagement and communication skills among medical students.[7,16] Recent systematic evidence also confirms that structured empathy training interventions significantly improve communication skills and patient-related outcomes among healthcare professionals.[18] The present findings support these observations and further extend them by demonstrating measurable improvements across multiple domains, including emotional self-regulation.

Unlike earlier studies, the present study uniquely incorporates equanimity as a measurable outcome, emphasizing emotional self-regulation as a critical component of clinical competence. This aligns with the conceptual understanding of clinical empathy as a balanced integration of emotional awareness and professional objectivity.[16] Additionally, global healthcare frameworks increasingly emphasize people-centred care, highlighting the essential role of caregivers and the need to sensitize future physicians toward caregiver experiences and involvement in care.[19]

The improvement across domains suggests that short-term structured interventions are effective in enhancing awareness and attitudes toward caregivers. However, relatively modest changes in some item-level responses indicate that deeper behavioural transformation may require longitudinal reinforcement across clinical training.

Limitations

The study was limited by its single-centre design, short-term assessment, and reliance on self-reported measures, which may be subject to social desirability bias. Similar limitations have been reported in previous empathy intervention studies. Long-term follow-up and multi-institutional studies are recommended to evaluate sustained impact.

CONCLUSION

AETCOM module 2.8 significantly improves empathy and equanimity toward caregivers among MBBS students. Experiential learning strategies are effective in developing affective competencies. Longitudinal reinforcement across clinical postings is essential to sustain these improvements and promote compassionate, patient-centred care.

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Ethical approval: The study was approved by the Institutional Ethics Committee ESIC Medical College and Hospital, Faridabad (approval number: 134X/11/13/2025-IEC/DHR/42.

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