Original Article

Training on empathy skills for elderly persons to medical undergraduates: A quasi-experimental study

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Abstract

Introduction: Undergraduate medical students often lack the soft skill of empathy which is considered as an important attribute for doctors. Hence, this study was conducted to improve the empathy skills among undergraduate students of a medical college in Kolkata. **Methods:** A quasi-experimental study was conducted in the Rural Health Training Centre of a medical college in Kolkata among the undergraduate medical students during community medicine posting. Students were assessed for baseline empathy by Jefferson's Scale of Empathy (student's version) (JSE-S). Baseline perception was taken from geriatric persons about the empathy level of medical undergraduates using Jefferson's Scale of Patient's Perception about Physician's Empathy (JSPPE). Training module was prepared, validated and imparted. Post-training score was obtained using the scales for students as well as geriatric persons. Data were entered in MS Excel and analysed using STATA MP16. **Results:** Total of 93 students participated. Overall Mean ± SD of pre-score of JES-S was 102.03 ± 13.02, and post-score was 109.03 ± 14.57; the difference was found to be statistically significant ($P < 0.001$). With respect to JSPPE, score difference was found to be statistically significant ($P < 0.001$). Significant difference was present in scores between the students who prefer people-oriented specialities compared to the technology-oriented specialities ($P < 0.05$). Increase in mean empathy score was significantly higher among female students than their male counterparts ($P = 0.01$). **Conclusion(s):** The study shows the effectiveness of training module in increasing empathy score among medical undergraduates which is the need of the hour to establish the proper building block of doctor-patient relationship.

Keywords: Empathy, training module, undergraduate medical students

Introduction

Empathy is considered as an important attribute for doctors. It is not synonymous with sympathy which means concern for the beneficence of others. Empathy is one's ability to understand the feelings and emotions of people. It is essential for good doctor-patient interaction as it enables doctors to understand the inner feelings of the patients and respond accordingly in managing the patients.[1] Empathic communication skill has been found to be associated with increased patient satisfaction, better compliance with therapy and decreased litigation cases.[2] It indirectly states that a good doctor must be empathetic. It is said that doctors previously maintained the quality of empathy in spite of the science-based nature of their training, but with time the doctor-patient relationship has undergone transformation and recent changes in the practice of medicine have made the role of a doctor as a service and information provider undermining the importance of empathy.[3]

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Undergraduate medical students often lack the soft skill of empathy compromising the goal of producing competent doctors in the true sense. Although the National Medical Commission (NMC) of India has recently proposed a reform in medical education by including soft skill development like ethics, attitude and communication, this field still requires much attention. Empathy encompasses different dimensions like cognitive, behavioural, emotive and moral components.[4] Curriculum of undergraduate medical education addresses the soft skill of empathy in Attitude, Ethics and Communication (AETCOM module) in the present scenario, but practical field experience about learning empathy is lacking in the present curriculum. Students learn them by following the medical teachers during their clinical rotations which is always coined down to their perception. However, empathy can be always improved by training and education.[5]

Researchers have tried different methods to teach and improve empathy. The importance of teaching empathy to medical students is increasing. A study among first-year medical school students showed that training improved their empathic skills.[6] The introduction of empathy skill curriculum in medical education should yield more empathetic doctors who will bring better health outcomes to the society.

The pace of population ageing is accelerating, and developing countries must adapt much more quickly to ageing populations. The World Health Organization (WHO) has addressed four areas for action at the beginning of Decade of Healthy Ageing (2021–2030): a) To change how we think, feel and act towards age and ageing; b) To ensure that communities foster the abilities of older people; c) To deliver person-centred integrated care and primary health services responsive to older people; and d) To provide access to long-term care for older people who need it[7] In all these areas, empathy skill of undergraduate medical students may provide a huge boost.

It is assumed that changes in physicians' behaviour would be detected by patients resulting in better patient ratings on standardized measures of empathy skills. This helps to strengthen the therapeutic relationship and increases the patient's trust in his or her physician. A physician's empathy helps a patient to manage what are sometimes intense emotions and makes it easier for the patient to begin the primary care and therapeutic process. All the MBBS undergraduate students are future budding physicians and thus need to empathize with patients to improve their primary care. Moreover, incorporating the training in the existing community medicine curriculum will not incur any extra hours from the timetable. Hence, this study was conducted to improve the empathy skills for elderly person among undergraduate students of a medical college in Kolkata.

Objectives:

1. To evaluate the effectiveness of training of empathy skills for elderly person among undergraduate medical students
2. To assess the feedback from the undergraduate medical students regarding the empathy training module

Methods

A quasi-experimental study was conducted in the Department of Community Medicine and the Rural Health Training Centre attached to this medical college over a period of one year. Undergraduate medical education imparts training in community medicine which deals with theory as well as practical field exposures related to public health. The undergraduate students have to visit families in rural areas as a part of the curriculum to collect clinic-psycho-social-environmental history and suggest remedial measures. This opportunity of field exposure is utilized for imparting training of empathy among the undergraduate students without disturbing the existing schedule. The concept of empathy has been recently introduced in curriculum which requires detailed intervention in the practical field. The study population consisted of (a) undergraduate phase 3 part 1 medical students who were allotted family visit during their community medicine posting and (b) geriatric persons (≥60 years of age) in the allotted families residing in the area catered by the Rural Health Training Centre (RHTC). Approval of the study was obtained from the Institutional Ethics Committee of the medical college vide letter no. 412 (XXXX-YYYY)/IEC/2014-15/Vol-1 dated 02.09.2019. Written informed consent was obtained from the study participants when administering the questionnaire. Those unwilling to participate in the study or participating in another educational program at the same time were excluded. The sample size was all the 93 students of phase 3 part 1 students who had community medicine posting in subsequent batches and equal number of geriatric patients selected by convenience sampling.

Data collection method:

Phase 1: Students of phase 3 part 1 batch who were allotted for family visit were assessed for baseline empathy by Jefferson's Scale of Empathy (student's version) (JSE-S). Baseline perception was taken from geriatric persons about the empathy level of medical undergraduates using Jefferson's Scale of Patient's Perception about Physician's Empathy (JSPPE).

Phase 2: Training module of empathy for elderly person was developed and validated by experts. Experts in the field of geriatric medicine, public health specialist, psychiatrist, social scientist were approached for valuable opinion and validation.

Phase 3: Training module was imparted in the scheduled timing of ward posting from 10 AM to 12 PM for four days for each batch that was scheduled for family visit. Teaching-learning methods used were didactic lecture, movie play, role play and small group discussion, self-directed learning, etc., for training of the students. The entire training module consists of the following four modules:

Module 1: Concept of empathy and awareness about geriatric health condition (2 hours) which consists of the importance and objectives of empathy-building workshop, concept of empathy, difference between sympathy and empathy, epidemiology of ageing, physiological and psychological changes of ageing and common barriers to communication in older adults. Materials used were flap over charts, marker, computer setup and screen for powerpoint presentation.

Module 2: Active listening (2 hours) where students were given exercises like "What hinders accurate listening" (Enclosure-1), Accurate listening (Enclosure-2) and Reading expressions (Enclosure-3) using the photos by Paul Ekman.

Module 3: Perspective-taking (2 hours) which consists of exercises of two hours. The teaching-learning methods used were small group discussion and self-directed learning. Exercise 1: What do you see? (Enclosure-4); Exercise 2: People have different imaginations; Exercise 3: Understanding perception differences, etc., were introduced.

Module 4: Feedback (2 hours) was obtained from the participants on how they experienced this module; how far the learning objectives have been achieved; what are positive and negative points of this module and how can this module be improved. Furthermore, they were asked how they experienced the whole empathy training, whether the learning objectives were achieved and how the training can be improved.

Teaching-learning methods used were didactic lecture, movie play, role play and small group discussion, self-directed learning. Training module started with the introduction that describe the importance and objectives of empathy-building workshop, concept of empathy, difference between sympathy and empathy, epidemiology of ageing, physiological and psychological changes of ageing and common barriers to communication in older adults. There were many exercises on active listening and perspective-taking as per the module.

Phase 4: Students were exposed in the rural field practice area of the Department of Community Medicine, during their family visit schedule for one month, one day in one week for four days in one month. All 93 students came in three batches (each batch consists of 31 students) according to their schedule of family visit. These batches of 31 were divided into three small subgroups where each subgroup having 10,10,11 students, respectively. One faculty member from Community Medicine Department of that Medical College guided each subgroup and gave hands-on training to them about empathy and communication skills with the help of the empathy training module. After the exposure session to real-life scenario in the rural field practice area of the Department of Community Medicine, students were assessed at the end of one month posting for empathy with JSE-S scale again. Geriatric participants' perception about medical students' empathy was also checked again using JSPPE scale. All 93 students were assessed about their skill of empathy. For standardization purpose of the study procedure, one sensitization meeting of the motivated faculties was arranged before starting the study.

Phase 5: Feedback from students was obtained about the empathy training module.

Study tool consisted of two validated scales (a) Jefferson's Scale of Empathy-Student Version (JSE-S)[8] and (b) JSPPE.[9] JSE-S is a 20-item questionnaire, all of which address the respondents' level of empathy with patients. The items were answered based on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scores range from 20 to 140, with higher scores indicating greater empathy with patients. JSPPE is a 5-item questionnaire with 7-point Likert scale. A respondent had to answer all the questions. Each of the questions was directly scored on its Likert weight. Strongly disagree had a point of 1 and strongly agree had a point of 7. Total score was the sum of all individual score and ranged from 5 to 35. The higher score indicates that physician is more empathetic in the patient's perception.

Statistical analysis plan

Data were entered in MS Excel and analysed using STATA MP16. Mean and standard deviation were calculated for the overall pre-test and post-test scores as well as separately for the subgroups based on gender and the future speciality preference. The difference between the means of overall pre-test and post-test scores was tested for statistical significance by paired *t*-test, and the association of empathy score with future speciality preferences and gender was tested by independent *t*-test at 5% significance level.

Results

Total of 93 students participated. Majority of the student participants belong to the age group of less than 22 years (49.5%). Female participants were 68.8%, whereas male participants were 31.2%. Regarding choosing of speciality in future, around 43% participants wanted to pursue technology-oriented (surgery allied) specialities and 57% of them wanted to pursue people-oriented (medicine allied) specialities.

Table 1 is showing the individual item difference in the pre- and post-JES score with an overall Mean ± SD of pre-score of JES-S is 102.03 ± 13.02 with the Median 100 and Range 74–131. Mean ± SD of post-score of JES-S is 109.03 ± 14.57 with Median 108 and Range 78–139.

Table 2 is showing the individual item difference in the pre- and post-score of JSPPE with an overall Mean ± SD 22.76 ± 2.50, Median 23, Range 19–28 as pre-score and Mean ± SD 28.63 ± 0.96, Median 29, Range 27–30 as post-score.

Table 3 shows the JSE-S and JSPPE pre- and post-training score difference which was found to be statistically significant ($P < 0.001$).

Table 1: JSE-S score of individual components (*n*=93)

Items	Pre-training score Mean±SD	Post-training score Mean±SD
1.Physician's understanding of their patient's feeling and the feeling of their patients' family does not influence medical or surgical treatment	4.83±1.74	5.13±1.84
2.Patients feel better when their physicians understand their feeling	5.99±1.41	6.29±1.41
3.It is difficult for a physician to view things from patients' perspective	3.84±1.73	4.43±1.78
4.Understanding body language is as important as verbal communication in physician-patient relationship	6.04±0.85	6.34±0.73
5.A physician's sense of humour contributes to a better clinical outcome	5.81±1.03	6.18±0.90
6.Because people are different, it is difficult to see things from patients' perspectives	3.20±1.37	4.05±1.45
7.Attention to patients' emotions is not important in history taking	4.73±1.92	5.20±1.74
8. Attentiveness to patients' personal experiences does not influence treatment outcomes	4.95±1.65	5.37±1.49
9. Physicians should try to stand in their patients' shoes when providing care to them	4.53±1.73	5.01±1.64
10.Patients value a physician's understanding of their feelings which is therapeutic in its own right	5.35±1.43	5.68±1.44
11. Patients' illnesses can be cured only by medical or surgical treatment; therefore, physicians' emotional ties with their patients do not have a significant influence in medical or surgical treatment	5.47±1.65	5.78±1.40
12. Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints	5.09±1.72	5.52±1.63
13. Physicians should try to understand what is going on in their patients' minds by paying attention to their non-verbal cues and body language	5.88±1.03	6.09±0.99
14. I believe that emotion has no place in the treatment of medical illness	5.31±1.93	5.58±1.93
15. Empathy is a therapeutic skill without which the physician's success is limited	5.70±1.24	5.87±1.18
16. Physicians' understanding of the emotional status of their patients, as well as that of their families is one important component of the physician-patient relationship	5.87±1.00	6.01±1.05
17. Physicians should try to think like their patients in order to render better care	4.17±1.68	4.52±1.72
18. Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members	2.73±1.7	3.27±1.80
19. I do not enjoy reading non-medical literature or the arts	6.39±1.09	6.49±0.88
20. I believe that empathy is an important therapeutic factor in medical treatment	6.15±1.09	6.22±1.07
Total Score	Mean±SD 102.03±13.02 Median=100 Range=74-131	Mean±SD 109.03±14.57 Median=108 Range=78-139

Table 2: JSPPE score of individual components (*n*=93)

Questions	Pre-training score Mean±SD	Post-training score Mean±SD
Can view things from my perspective	4.7±0.67	5.9±0.58
Asks about what is happening in my daily life	4.6±0.48	5.9±0.31
Seems concerned about me and my family	4.3±0.81	5.4±0.49
Understands my emotions, feeling and concerns	4.4±0.97	5.6±0.48
Is an understanding doctor	4.6±0.66	5.8±0.62
Total Score	Mean±SD 22.76±2.50 Median=23 Range=19-28	Mean±SD 28.63±0.96 Median=29 Range=27-30

Table 3: Comparison of JSE-S and JSPPE pre- and post-test score (*n*=93)

Comparison of JSE-S pre- and post-test scores				
JSE-S	**Mean±SD**	***t***	**df**	***P***
Pre-test score	102.03±13.02	***t*=9.85**	92	<0.001
Post-test score	109.03±14.57			
Comparison of JSPPE pre- and post-test scores				
JSPPE	**Mean±SD**	***t***	**df**	***P***
Pre-test score	22.76±2.5	***t*=27.14**	92	<0.001
Post-test score	28.63±0.96			

Table 4 shows that significant difference is present in both pre- ($P = 0.008$) and post- ($P = 0.001$) mean empathy scores of JSE-S between the students who prefer people-oriented specialities compared to those who favour the technology-oriented specialities but the score difference is found to be statistically non-significant ($P = 0.284$). There is no significant difference found in mean empathy scores between male and female students during both pre-test ($P = 0.7$) and post-test ($P = 0.5$); however, the increase in mean empathy score after giving training using empathy training module was significantly higher among female students than their male counterparts ($P = 0.01$).

Figure 1 shows the feedback response regarding the empathy training module. The feedback obtained from the medical undergraduates about the training module was satisfactory as majority of them had opted for good and excellent version. No response for the option "Bad" which was provided as the first option in the feedback form. Through this training programme, they got to know about empathy and its implementation, the difference between sympathy and empathy. Also, they learned about human micro-expressions for effective communication

Table 4: The association of empathy score with speciality preferences and gender (*n*=93)

Comparison of JSE-S pre- and post-test scores as per choice of future subject preference							
JSE-S	**Speciality**	***n***	**Mean**	**Std. Dev.**	***t***	**Df**	**Significance**
Pre-test score	People-oriented	53	105.13	11.07	2.73	91	0.008
	Technology-oriented	40	97.93	14.36			
Post-test score	People-oriented	53	113.32	12.21	3.30	91	0.001
	Technology-oriented	40	104.03	14.93			
Score difference	People-oriented	53	8.32	7.70	1.08	91	0.284
	Technology-oriented	40	6.78	5.48			
Comparison of JSE-S pre- and post-test scores across gender							
JSE-S	**Gender**	***n***	**Mean**	**Std. Dev.**	***t***	**Df**	**Significance**
Pre-test score	Male	29	102.79	14.62	0.378	91	.70
	Female	64	101.69	12.34			
Post-test score	Male	29	107.14	13.18	-0.68	91	.50
	Female	64	109.89	15.18			
Score difference	Male	29	4.34	4.99	-.2.59	91	.01
	Female	64	8.20	7.26			

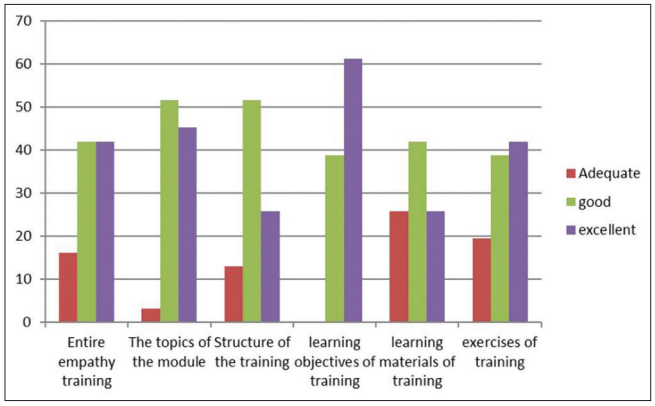

Figure 1: Feedback of students regarding the empathy training module (N = 93)

and communication skills with geriatric patients. Qualitative statements about the gains of training like good doctor-patient relationship, field experience from patients and catching golden moments were encouraging. Suggestions from the study participants to improve the training programme were to include more exposure to real-life scenario and arrangement of more role plays with patients and family. They also asked for more time for preparation and proper scheduling of time of the training programme.

Discussion

In our study, the mean pre-test and post-test JSE-S scores were 102.03 (SD ± 13.02) and 109.32 (SD ± 14.15), respectively, whereas in the study by Srivastava *et al.*[5] the mean pre-test and post-test JSE-S scores were 99.01 (SD ± 12.9) and 109.33 (SD ± 12.8), respectively. Many qualitative and quantitative studies are done to compare the intervention of empathy module in the world using many different scales. In 2004, an author used two tools like Balanced Emotional Empathy Scale (BEES) and Empathy Construct Rating Scale (ECRS).[10] Moderate effect size was noticed with BEES, and no change was noticed with ECRS. Researchers had conducted a randomised-controlled trial using interpersonal skill workshop which showed significant increase in empathy level.[11,12] A qualitative analysis of case studies of students who had been hospitalized showed improvement in empathy among those students.[13] Reflective writing has also been used to assess empathy.[14]

Item statistics of the JSE-S[8] suggested that item mean score ranged low from 3.6 (1.4) for this statement "physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family member" to the highest score was obtained from the statement "patient's feel better when their physicians understand their feeling" 6.5 (0.8). In our study, also the score for the statement "Patients feel better when their physicians understand their feeling" was (5.99 + 1.41 vs 6.29 + 1.41) on higher side, although the highest score was obtained for the statement "I do not enjoy reading non-medical literature or the arts" (6.39 + 1.09 vs 6.49 + 0.88). The score for the statement "I believe that empathy is an important therapeutic factor in medical treatment" was also on the higher side (6.15 + 1.09 vs 6.22 + 1.07). The score of the statement "Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members" was the lowest (2.73 + 1.7 vs 3.27 + 1.80) in the current study also like the study conducted by Hojat *et al.*[15]

JSPPE score which measures clinicians empathy as viewed by patients also shows significant improvement ($P < 0.01$) after application of the training module. Simplicity of the instrument and evidence in support of its psychometrics have popularized the use of this scale as mentioned by Hojat *et al.*[16]

In the current study, it has been seen that there was significant difference in both pre-test and post-test mean empathy scores of JSE-S between the students who prefer people-oriented specialities compared to those who favour the technology-oriented specialities. The students who prefer people-oriented specialities

had significantly higher mean empathy score than the students who prefer technology-oriented specialities. This result differs from other studies[17,18] in which there was no significant difference in empathy scores that were found between the students according to preference of chosen speciality. However, the study by Hojat *et al.*[15] supports the findings of our study in which the difference in empathy scores between the two groups became statistically significant starting from year 2 of medical school. Earlier studies found that the female students had significantly higher empathy levels than male students.[17,18] In our study, there was no significant difference found in mean empathy scores between male and female students during both pre-test and post-test; however, the increase in mean empathy score after giving training using empathy training module was significantly higher among female students than their male counterparts. In the study by Naseem *et al.*,[19] the overall mean empathy score for females was significantly higher than the male participants.

The feedback obtained from the medical undergraduates about the training module was satisfactory as majority of them had opted for good and excellent version. Qualitative statements about the gains of training like good doctor-patient relationship, communication with geriatric patients and catching golden moments were encouraging. Suggestions for improvement like more exposure to real-life scenario and arrangement of role plays could be incorporated for the larger studies in future. These modifications will lead to better empathy skills of primary care physicians and thus improved care of the elderly persons.

Conclusion

The finding of our study suggests that it is feasible to prepare a module on empathy training focusing on geriatric population and implement this module training within the existing community medicine curriculum as because the training has been incorporated during the family visit which is compulsory posting in rural health centre area for medical undergraduates. The study also shows the effectiveness of training module in increasing empathy score among medical undergraduates. Geriatric persons' perception about the empathy of medical undergraduate has also improved. Students felt motivated about the empathy training module. The study is limited by its small sample size and single-centre finding. Moreover longitudinal effects of this kind of training are not assessed. More rigorous research on longitudinal studies is recommended. Teaching empathy in the existing curriculum is the need of the hour to establish the proper building block of doctor-patient relationship. The multiple method study Liu *et al.*[20] showed immersive virtual reality (IVR)-assisted experiential learning enhances students' knowledge and empathy in caring for older adults and can be a valuable tool in professional healthcare education. That kind of tool can be developed for further experimentation of empathy skills among medical students in future.

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Conflicts of interest

There are no conflicts of interest.

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