

Impact of Communication Training on the Empathy of Medical Students

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ABSTRACT

Introduction: Effective doctor-patient communication is a key determinant of quality health care and is closely associated with empathy, a communication competency considered essential in medical education, particularly for medical students. This study aimed to examine the effect of effective doctor-patient communication training on the empathy among students in the Medical Education Study Program, Faculty of Medicine and Health Sciences, Universitas Islam Negeri Alauddin Makassar.

Method: A one-group pretest-posttest pre-experimental design was applied to 78 students who were undertaking mentoring activities for pregnant and breastfeeding mothers in the 1000 Days of Life program. Empathy was measured before and after communication training and simulation using the Indonesian-validated Jefferson Scale of Physician Empathy (20 items, five-point Likert scale). Data were analyzed using a paired t-test.

Results: The median empathy score increased from 66 (50-98) to 70 (61-100) and the mean score increased from 68.36 ± 8.122 to 71.76 ± 7.889 . The paired t-test showed a significant improvement ($P = 0.014$). Most respondents remained in the low-empathy category at both time points (61.5% at pretest and 55.2% at posttest).

Conclusion: Effective doctor-patient communication training significantly improved the empathy scores among medical students, although most students remained in the low-empathy category, indicating a need for continued and more comprehensive integration of communication training into the curriculum.

Keywords: Communication, doctor-patient relationship, empathy, Jefferson scale, medical students



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Introduction

Communication is, terminologically, the process of delivering a statement from one person to another.¹ Based on this definition, it can be seen that communication involves multiple individuals; that is, communication is fundamentally an activity of exchanging ideas. Communication is a process of delivering information received by the senses to the brain. This information can originate from the environment, other organisms, or from oneself. Viewed from a biological perspective, the process of transmitting information is highly complex, involving the synergy of the brain with various sensory organs and body systems, as well as millions of nerve cells throughout the brain and body.² The main elements that play a role in communication are the communicator, message, media, communicant, and feedback.³

Communication can be effective when a number of principles are followed, namely: the communicator respects every individual, person, and group that is the target of communication; the communicator must be able to place themselves in the situation or circumstances faced by others; the message is received by the recipient and clearly understood; the message is clear so that it avoids ambiguity; and demonstrating humility and willingness to listen to others.

Doctor-patient communication is a process that involves a health message and communication participants. Good communication between doctors and patients is one of the key determinants of successful medical care. With good and effective communication, health services can be optimized; patients will feel more comfortable and satisfied; and the risk of malpractice may be reduced, so that effective communication becomes a determinant of patient satisfaction.⁴ Among the elements that influence effective communication is empathy, which is the ability of a person to recognize and understand another person's experiences and feelings. Empathy is an emotional experience between the observer and the subject, in which the observer identifies and displays the subject's emotions based on sight and hearing.⁵ Empathy can initiate a person to give an appropriate response without becoming involved in the feelings concerned.⁶

Empathy is particularly important in doctor-patient communication. In the Indonesian medical education competency curriculum, communication has been consistently cited as a core competency of the medical profession. Empathy has been conceptualized as a communication competency between doctors and patients, in which the doctor uses various perceptive skills that lead to the expression of attention and compassion. This includes observing sensory and affective cues to identify and understand the patient's emotional experience and using cognitive abilities such as perspective-taking to understand the patient's

experience. The term “empathy” refers to an aspect of personality that plays an important role in interpersonal and internal relationships, facilitating competence in health communication, especially for medical students.⁷

Many factors influence the doctor-patient relationship, including sociocultural background, the educational background of both doctor and patient, previous medical experience, the doctor's age, and attitude toward patients. These factors can influence the empathy among medical students in particular, which may be expressed differently as the students progress and undergo clinical training or become doctors.⁸ Several factors may influence a person's empathy, consisting of socialization, mood and emotions, situational and environmental factors, communication and language, and parenting.⁹

While prior studies have assessed cross-sectional empathy among clinical clerks, limited research has examined the impact of structured communication training during field-based mentoring programs under physical distancing constraints. Therefore, this study aimed to evaluate the impact of structured doctor-patient communication training on the empathy scores of medical students participating in the 1000 Days of Life (1000 *Hari Pertama Kelahiran*, HPK) mentoring program.

Methods

This study aimed to examine the effectiveness of effective doctor-patient communication on the empathy of students of the Medical Education Study Program, Faculty of Medicine and Health Sciences, Universitas Islam Negeri (UIN) Alauddin Makassar, using a one-group pretest-posttest pre-experimental design. The research was conducted at two locations: the Medical Education Study Program at the Faculty of Medicine and Health Sciences, UIN Alauddin Makassar (located at Sultan Alauddin St. No. 63, Makassar, South Sulawesi), and the Community Health Center (Puskesmas) areas serving as practicum sites for the "First 1000 Days of Life" mentoring program. The research was carried out from August 18 to September 27, 2021. The present study was conducted based on ethical approval issued by the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences, UIN Alauddin Makassar, under ethical approval number B.133/KEPK/FKIK/IX/2021.

Total sampling was used in the present study. A total of 96 undergraduate medical students who were participating in mentoring activities for pregnant and breastfeeding mothers in the “First 1000 Days of Life” mentoring program in 2021, were initially selected. However, during the course of the study, 18 students were excluded for the following reasons: (1) Failure to participate in the effective communication reinforcement process; (2) Failure to complete the pre-test and post-test empathy questionnaires. Finally, the study included 78 participants in

the analysis stage.

The study participants were given a pre-test questionnaire about empathy and effective communication, referring to the Jefferson Empathic Scale with a Likert scale. Afterward, the subjects then received a 3-hour training session covering lectures on the Calgary-Cambridge guide, role-play and simulations, and field application. Subjects were then given the post-test questionnaire about empathy and effective communication using similar instrument. The Jefferson Empathic Scale used was the scale for assessing empathy and effective communication on medical students, consisting of 20 items— 15 positively worded items and 5 negatively worded items. The Likert scale used consisted of five response options, namely: Scale 1 (Strongly Disagree); Scale 2 (Disagree); Scale 3 (Neutral); Scale 4 (Agree); Scale 5 (Strongly Agree).

Statistical analysis began with a test of normality to determine whether the data were normally distributed using the Shapiro-Wilk tests. The results indicated that the data were normally distributed. The paired t-test was subsequently used to assess the effect of doctor-patient communication training on student empathy. Data processing was performed using SPSS software with a significance level of $\alpha = 0.05$.

Result

Table 1 summarizes the participants' characteristics. the largest group of respondents was within the 19-year-old age bracket, representing 46.2% of the total respondents. The majority of the respondents were female (65 individuals, or 83.3%), which aligns with the gender composition of students in the Medical Education Study Program across all cohorts, where women predominate.

Table 1. Baseline demographic characteristics of study participants (N=78).

Characteristics	Frequency (n)	Percentage (%)
Age		
18 years	4	5.1
19 years	36	46.2
20 years	25	32.1
21 years	11	14.1
22 years	2	2.5
Gender		
Male	13	16.7
Female	65	83.3

Changes in the distribution of empathy categories among students before and after the training are presented in **Table 2**. Overall, a positive shift was observed in the respondents' empathy levels. The "Very Low" category was decreased to 0% following the intervention, dropping from 7.7% (n = 6) in the pre-test to 0.0% (n = 0) in the post-test. Conversely, the proportion of students in the "Moderate" category increased from 23.1% (n = 18) to 35.9% (n = 28), and the "Very High" category rose from 2.6% (n = 2) to 5.1% (n = 4). Nevertheless, the majority of respondents remained in the "Low" category both before (61.5%) and after the intervention (55.1%).

Table 2. Proportion of empathy categories before and after communication training (N=78).

Empathy Category	Pre-Test n (%)	Post-Test n (%)
Very Low	6 (7.7%)	0 (0.0%)
Low	48 (61.5%)	43 (55.2%)
Moderate	18 (23.1%)	28 (35.9%)
High	4 (5.1%)	3 (3.8%)
Very High	2 (2.6%)	4 (5.1%)

Table 3 shows a statistically significant increase in students' empathy scores following effective communication training. Prior to the intervention, the mean empathy score was 68.36 ± 8.122 . After the delivery of course material and doctor-patient communication simulations, the mean empathy score rose to 71.76 ± 7.89 . A paired t-test yielded a *P*-value of 0.014 ($P < 0.05$), confirming that the communication training had a statistically significant positive impact on increasing students' numerical empathy scores.

Table 3. Comparison of empathy scores before and after communication training (N=78).

Numerical Parameter	Pre-Test	Post-Test	<i>P</i> -value
Mean $\pm$ Standard Deviation	68.36 ± 8.122	71.76 ± 7.89	0.014*
Median (Minimum-Maximum)	66 (50-98)	70 (61-100)	

Paired t-test on numerical scores comparison. * significant at $P < 0.05$.

Discussion

This study evaluated the impact of structured doctor-patient communication training on the empathy levels of undergraduate medical students participating in a field-based mentoring program. The findings demonstrate that targeted communication training led to a statistically significant improvement in overall empathy scores. Notably, the lowest empathy category was completely eliminated post-intervention, accompanied by a positive shift of students into

higher empathy categories. These outcomes align with the theoretical framework articulated by Krol and Bartz,⁷ which emphasizes that empathy is not an immutable personal trait but a dynamic interpersonal skill that can be developed through focused educational interventions.

A possible mechanism underlying this improvement lies in the structured methodology of doctor-patient communication instruction. Communication curricula that incorporate active listening, affective cue recognition, and perspective-taking provide medical trainees with structured tools to engage with patient experiences.^{4,6} By participating in role-play simulations prior to community placement, students transition from purely bio-physiological learning to recognizing the psychosocial and emotional needs of patients, thereby improving their overall empathic responsiveness.⁹

Despite the observed statistical gains, a substantial majority of participants remained within the low-empathy category post-training. This outcome can be contextualized by the unique environmental and operational constraints present during the study, which coincided with strict public health restrictions under Level 3 Community Restrictions (PPKM). Students were required to wear personal protective equipment, including face masks and face shields, and frequently relied on telecommunication via mobile calls. As highlighted by Nuzuli,¹⁰ physical barriers such as masks impair auditory perception and vocal clarity, while remote channels may limit access to non-verbal emotional cues and facial expressions essential for deep empathic engagement. Consequently, these communication barriers limited the full realization of the educational intervention.

When compared with existing literature, the baseline empathy patterns observed in this cohort reflect distinct stages of medical education. A study by Runtuwarow et al.¹¹ among clinical clerks at Prof. Dr. R.D. Kandou General Teaching Hospital revealed predominantly high empathy levels. Clinical clerks engage in daily, direct patient care within hospital wards, which continuously reinforces empathetic communication through immersive experiential practice. In contrast, pre-clinical or early-clinical undergraduate students participating in field mentoring have had limited prior clinical encounters. Furthermore, cross-sectional findings by Pinagsirih et al.¹² across medical student cohorts confirm that baseline empathy often remains constrained prior to extensive clinical exposure.

These findings demonstrate that while a single communication training session achieves measurable improvements in empathy scores, sustained integration of communication modules throughout the medical curriculum is essential to shift students into high-empathy categories. Integrating longitudinal simulated training with regular, face-to-face clinical encounters will provide an optimal environment for cultivating long-term empathic competencies.

Several limitations of this study must be acknowledged. First, the study employed a pre-experimental single-group pretest-posttest design without a control group, which limits the ability to draw definitive causal conclusions or rule out external confounding factors such as testing effects. Second, the sample was derived from a single cohort at one institution with a predominant representation of female students (83.3%), restricting the generalizability of the results to broader medical student populations. Finally, the study was conducted under pandemic-era restrictions, where personal protective equipment and remote communication constrained standard interpersonal interactions. Future research should utilize randomized controlled trial (RCT) designs with multi-center sampling and evaluate long-term empathy retention in standard face-to-face clinical environments.

Conclusion

Effective doctor-patient communication training significantly improved the empathy scores of medical students. However, even after training, a substantial proportion of students remained in the low-empathy categories, indicating that brief or single-session training is insufficient to achieve high, sustained levels of medical empathy. To optimize student empathy, effective doctor-patient communication modules should be integrated continuously throughout the curriculum rather than as isolated field interventions. Future training programs should also address physical and technological communication barriers such as those encountered during physical distancing or remote consultations to ensure robust development of interpersonal and compassionate clinical skills.

Conflicts of Interest

The authors declare that they have no conflict of interest related to this manuscript.

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References

1. Dahrial D, Iskandar I, Suhardi S. Communication Concept in Education. *Nat Conf Appl Business Edu Technol (NCABET)*. 2024;3(1):507-16.

2. Mishra AS. Communication Beyond Words and Language: Role of Five Senses. *Int J Scient Res Manag*. 2023;11(07):19-21.
3. Efendi E, Dwi A, Adfi L, Fikri M, Nadiyah R. Analysis of Elements of Communication. *Da'watuna: J Communic Islamic Broadcast*. 2024;4(3):1071-80.
4. Chen X, Liu C, Yan P, Wang H, Xu J, Yao K. The Impact of Doctor-Patient Communication on Patient Satisfaction in Outpatient Settings: Implications for Medical Training and Practice. *BMC Med Educ*. 2025;25(1):830.
5. Mansur SS, DeFelipe J. Empathy and The Art of Leonardo da Vinci. *Front Psychol*. 2023;14:1260814.
6. Guidi C, Traversa C. Empathy in Patient Care: From 'Clinical Empathy' to 'Empathic Concern.' *Med Health Care Philos*. 2021;24(4):573-85.
7. Krol SA, Bartz JA. The Self and Empathy: Lacking a Clear and Stable Sense of Self Undermines Empathy and Helping Behavior. *Emotion*. 2022;22(7):1554-71.
8. Alkhamees M, Alasqah I. Patient-physician Communication in Intercultural Settings: An Integrative Review. *Heliyon*. 2023;9(12):e22667.
9. Yu CC, Tan L, Le MK, Tang B, Liaw SY, Tierney T, et al. The development of empathy in the healthcare setting: a qualitative approach. *BMC Med Educ*. 2022;22(1):245.
10. Nuzuli AK. Inhibiting and Supporting Factors in Communication between Teachers and Deaf Students at SLBN Sungai Penuh City. *J Communication*. 2023;14(1):49-58.
11. Runtuwarow S, Pasiak TF, Ticoalu SHR. Gambaran Empati pada Mahasiswa Fakultas Kedokteran Universitas Sam Ratulangi Angkatan 2011. *J e-Biomedik*. 2017; 5(1).
12. Pinagsirih MHD, Findyartini A, Marpaung NLE. Hubungan antara Jenis Kelamin dan Tingkat Akademik dengan Empati pada Mahasiswa Fakultas Kedokteran Universitas Papua. *Undergradute Thesis*. Papua: Fakultas Kedokteran Unipa; 2019.