Section: Miscellaneous

Original Research Article

EMPATHY IN MEDICAL EDUCATION: A CROSS-SECTIONAL ANALYSIS OF UNDERGRADUATE MEDICAL STUDENTS' EMPATHY LEVELS.

Muralidhar C A[1], Rohini A[2], Dakshayini M[3], Ravikant[4], Mohammed Irfan[5]

[1]Associate Professor, Department of Ophthalmology, Oxford Medical College and Research Centre, Yadhavanahalli Attibele, Bangalore, India.
[2]Associate Professor, Department of Obstetrics and Gynecology, SIMSAR, Kolar district, Karnataka, India.
[3]Professor And Head, Department of Ophthalmology, Oxford Medical College and Research Centre Yadhavanahalli Attibele, Bangalore, India.
[4]Assistant Professor, Department of Microbiology, Nootan Medical College and Research Centre, Sankalchand Patel University, Visnagar, Gujarat, India.
[5]Senior Lecturer, Human Biology Department (Physiology unit), School of Medicine. IMU University. Kuala Lumpur, Malaysia.

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Corresponding Author:
Dr. Ravikant,
Assistant Professor, Department of Microbiology, Nootan Medical College and Research Centre, Sankalchand Patel University, Visnagar, Gujarat, India.
Email: ravikantbscity@gmail.com

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ABSTRACT

Background: A key element of patient-centered care is clinical empathy, which promotes communication, trust, and better therapeutic results. The purpose of this study was to evaluate clinical empathy among medical undergraduates in their final year and examine its relationships to speciality preference and gender.
Materials and Methods: A cross-sectional observational study was conducted among undergraduate medical students using the Jefferson Scale of Empathy (JSE). The 20-item self-administered questionnaire was rated on a 7-point Likert scale, measuring three dimensions: perspective-taking, compassionate care, and standing in the patient's shoes. Data were analyzed using SPSS (version 26.0), with descriptive statistics and inferential analysis performed using t-tests, ANOVA, and the Chi-square test. A p-value <0.05 was considered statistically significant.
Results: Analysis was done on 113 replies in total. While 26.55% of students demonstrated very poor empathy, the majority of students (65.49%) had low empathy. Only a small percentage showed very high empathy (0.88%) or moderate empathy (7.08%). There was no significant correlation between empathy levels and gender distribution ($\chi^2 = 1.5682$, $p = 0.667$). Similarly, there was no statistically significant correlation between empathy levels and speciality preference (clinical vs. non-clinical) ($\chi^2 = 3.9328$, $p = 0.269$).
Conclusion: The results show that clinical empathy is generally low among final-year medical students, with little variation based on speciality selection or gender. The findings point to the necessity for focused interventions to incorporate empathy training into medical curriculum and emphasise the possibility of a loss in empathy during medical training. Closing this gap may give rise to better healthcare outcomes and future patient-provider partnerships.
Keywords: Clinical empathy, medical education, medical students, specialty preference, patient-centered care.

INTRODUCTION

The ability to understand another individual's emotions, sentiments, and reactions and to effectively convey that knowledge to them is known as "empathy.[1] Clinical empathy has been defined by Mercer and Reynolds as the ability to comprehend the perspectives, feelings, and situation of the patient. Clinically empathic healthcare providers (HCPs) communicate with patients at the level of their understanding in such a manner that is therapeutically helpful to them. The healthcare provider's approach therefore entails thinking and feeling in order to comprehend (cognitive domain) and behaving in

order to communicate the felt thoughts (behavioural domain) in a way that enhances the patient's emotional state (affective domain).[2] The patient feels satisfied as a result of clinical empathy. Additionally, it helps HCPs make more rational and genuine clinical judgements. These elements indirectly support greater compliance and, ultimately, greater outcome improvement.[3] Research indicates that clinical empathy significantly improves patient satisfaction, comfort, and trust.[4,5] When patients trust their physicians, they tend to communicate more openly, providing detailed information that supports accurate diagnosis and collaborative decision-making.[6] Additionally, patients' confidence in their ability to handle specific situations (self-efficacy) can enhance adherence to prescribed therapies.[7]

Empathy from healthcare providers may itself have therapeutic benefits, contributing positively to patient outcomes. By fostering trust and understanding, empathetic interactions not only strengthen the patient-provider relationship but also encourage active patient participation in their care, ultimately promoting better health management and improved overall experiences in medical settings.[8] Although the advantages of empathy in healthcare are widely acknowledged, the concept of clinical empathy remains inadequately defined.[9]

It is often described as the ability of healthcare providers to understand patients' feelings, experiences, and perspectives while maintaining an appropriate professional boundary. However, there is no universally accepted framework to guide its implementation in clinical practice. This lack of clarity can make it challenging to teach, measure, and consistently apply empathy, despite its critical role in improving patient outcomes and satisfaction.

Understanding the current state of empathy among medical graduates can inform targeted interventions to preserve and enhance this critical skill. Assessing empathy also highlights gaps in existing curricula, guiding the development of educational strategies to foster compassionate care, ultimately benefiting both patients and the healthcare system. Hence the present study was carried out to assess the clinical empathy among medical undergraduates.

MATERIAL AND METHODS

A cross-sectional observational study was conducted amongst final undergraduate medical students of Oxford medical college and research centre. The JSE is a self-administered inventory consisting of 20 items, evenly divided between positively and negatively phrased statements. Respondents rate each item on a 7-point Likert scale, where 1 represents "strongly disagree" and 7 represents "strongly agree." For negatively phrased items, the scale is reversed, with 1 corresponding to "strongly agree" and 7 to "strongly disagree." This scale measures three latent factors: "perspective taking,""compassionate care," and "standing in the patient's shoes." Specialties were divided into two categories; clinical and non-clinical. The responses were recorded anonymously and consent for using the information for the study was taken before administration of the questionnaire. The data was entered into MS Excel 2019 version and further analyzed using SPSS (version 26.0;SPSS Inc., Chicago IL,USA). For descriptive analysis, the categorical variables was analyzed by using frequency and percentages and the continuous variables was analyzed by calculating mean ± Standard Deviation. For inferential analysis, the numerical data were analyzed using the "t"-test and ANOVA. The categorical data analyzed using Chi square test and a "p" <0.05 was considered as statistically significant.

RESULTS

A total of 133 responses were analysed in the study. The gender distribution shows a higher proportion of female participants in the study, with nearly a 3:2 ratio of females to males. The majority of participants (65.49%) scored in the low empathy category, followed by 26.55% who were classified as having very low empathy. Only a small fraction exhibited moderate (7.08%) or very high empathy (0.88%), indicating that empathy scores across this group are generally skewed towards the lower end of the scale. The vast majority of participants (93.81%) plan to pursue clinical specialties in the future, while only a small portion (6.19%) are considering non-clinical specialties. Table.1

Tabe 1: Demographic and Empathy Score Distribution among study subject

Variable	Category	Frequency	Percent (%)
Gender	Female	68	60.18%
	Male	45	39.82%
	Total	**113**	**100.00**%
Specialty in Future	Clinical	106	93.81%
	Non-Clinical	7	6.19%
	Total	**113**	**100.00**%
Total Score (Empathy Level)	Very Low Empathy	30	26.55%
	Low Empathy	74	65.49%
	Moderate Empathy	8	7.08%
	Very High Empathy	1	0.88%
	Total	**113**	**100.00**%

The analysis of the relationship between gender, specialty preference, and empathy levels revealed no significant associations. The Chi-square test yielded a value of 1.5682 with a p-value of 0.667, indicating that gender does not have a statistically significant association with empathy levels in this study. Regarding specialty preference, participants who aspired to clinical specialties displayed a similar trend, with most scoring in the low empathy category (63.21%), followed by a smaller group in the very low empathy category (28.30%). The Chi-square value for this comparison was 3.9328, with a p-value of 0.269, indicating that specialty preference is not significantly associated with empathy levels. [Table 2]

Table 2: Association of Gender and Specialty Preference with Empathy Levels

Variable	Category	Very Low Empathy	Low Empathy	Moderate Empathy	Very High Empathy	X^2 value	'p' value
Gender	Female	20 (29.41%)	42 (61.76%)	5 (7.35%)	1 (1.47%)	**1.5682**	**0.667**
	Male	10 (22.22%)	32 (71.11%)	3 (6.67%)	0 (0.00%)		
	Total	**30 (26.55%)**	**74 (65.49%)**	**8 (7.08%)**	**1 (0.88%)**		
Specialty in Future	Clinical	30 (28.30%)	67 (63.21%)	8 (7.55%)	1 (0.94%)	**3.9328**	**0.269**
	Non-Clinical	0 (0.00%)	7 (100.00%)	0 (0.00%)	0 (0.00%)		
	Total	**30 (26.55%)**	**74 (65.49%)**	**8 (7.08%)**	**1 (0.88%)**		

DISCUSSION

Empathy is the ability to understand and share the feelings of others. It is an essential element of physician-patient relationship which kindles the desire within the physician to help the patient, communicate with the patient and eventually provide the best possible care to the patient [10] In other words, it is the key factor in healthcare that can propel the clinician towards an altruistic impulse which is critical for the well being of the patient. In the present study, the empathy levels were low among final year medical graduates. In our study, mean empathy score is **66.61 ± 0.96 which is very low. This is in comparison with the study conducted in Iran.[11]** *Another study conducted by Bellini and Shae*among internal residency students indicated that the amount of empathy with patients was much higher in the first year as compared to the final year.[12] Another study reported a similar finding; while empathy scores did not alter significantly during the first two years (preclinical years), they decreased during the 3rd year (first clinical year) and remained low until graduation.[13]

In our study, no statistical difference was seen between male and female participants towards empathy levels. Our study findings are in comparison with the study conducted by Rahimi et al.[14] They found no differences in the mean empathy scores of female and male medical students

According to Chartarjee et al., clinical empathy was found to be significantly associated with gender, with females having significantly higher mean empathy scores than males. This difference tended to diminish over the semesters, such that by the seventh semester, no significant difference was seen in the mean empathy scores of female and male participants.[15] Another study Conducted by Shashikumar et al. [16]observed that the mean empathy scores of female medical students were higher than that of males. The cause for high empathy scores among females might be due to tools that rely on self-reporting for estimating empathy may induce biases leading the participating individual to assume traditional gender-based stereotypes.[17]

Further the study explored the association between empathy levels and specialty preference, categorizing participants into clinical and non-clinical career paths. The results indicated that all individuals opting for non-clinical specialties exhibited low empathy levels (100%), whereas those preferring clinical specialties showed a distribution across different empathy levels, with the majority (63.21%) falling into the low empathy category. While this difference was observed, the association was not statistically significant ($X^2 = 3.9328$, $p = 0.269$). This observation is in accordance with the study conducted by previously published studies.[16,18] But studies from other parts of India are not in line with the results of the present study.[15,19]

According to these results, students that are interested in non-clinical specialties might be less empathic than their clinical counterparts. This might be because non-clinical disciplines lack direct patient involvement, which may make empathy less of a deciding factor when choosing a specialty. On the other hand, although the majority still showed poor empathy, those seeking clinical specialties might need better empathy levels for patient-centered care. Although a pattern is evident, the lack of statistical significance suggests that specialized preference may be influenced by variables other than empathy levels. Deeper understanding of this association might be possible with greater sample sizes and other variables including personality traits, intrinsic motivation, and educational experiences.

Limitations: The cross-sectional design, small sample size, and dependence on self-reported data, which could introduce bias, are the study's limitations. Comparisons are limited by the imbalance in specialist preference, and evaluating changes over time is impossible due to the absence of objective empathy measures and longitudinal follow-up.

CONCLUSION

This study highlights low clinical empathy levels among final-year medical undergraduates, with the majority scoring in the low empathy range. While gender and specialty preference did not show significant associations with empathy levels, the findings suggest that empathy declines during clinical training. The lack of significant differences between genders or specialty preferences indicates that factors other than empathy might influence specialty choice. The study calls for enhanced empathy training throughout medical education to ensure better patient-provider relationships and care.

REFERENCES

1. Miller-Keane OT, O'Toole MT. Miller-Keane encyclopedia and dictionary of medicine, nursing, and allied health. 7th ed. Philadelphia: Saunders; 2003.
2. Neumann M, Edelhäuser F, Tauschel D, et al. Empathy decline and its reasons: a systematic review of studies with medical students and residents. Acad Med. 2011; 86:996-1009.
3. Quince T, Thiemann P, Benson J, Hyde S. Undergraduate medical students' empathy: current perspectives. Adv Med Educ Pract. 2016; 7:443-455. https://doi.org/10.2147/AMEP.S76800.
4. Reiss HT, Clark MS, Pereira Gray DJ, et al. Measuring the responsiveness in the therapeutic relationship: a patient perspective. Basic Appl Soc Psychol. 2008;30(4):339–348.
5. Kim SS, Kaplowitz S, Johnston MV. The effects of physician empathy on patient satisfaction and compliance. Eval Health Prof. 2004;27(3):237–251.
6. Derksen F, Bensing J, Lagro-Janssen A. Effectiveness of empathy in general practice: a systematic review. Br J Gen Pract. 2013;63(606):e76–e84.
7. Bandaru A. Self-efficacy- The Exercise of Control. New York: Freeman and Company; 1997.
8. Del Canale S, Louis DZ, Maio V, et al. The relationship between physician empathy and disease complications: an empirical study of primary care physicians and their diabetic patients in Parma, Italy. Acad Med. 2012;87(9):1243–1249.
9. Neumann M, Bensing J, Mercer S, et al. Analysing the "nature" and "specific effectiveness" of clinical empathy: a theoretical overview and contribution towards a theory-based research agenda. Patient Educ Couns. 2009;74(3):339–346.
10. Hodges SD, Klein KJK. Regulating the costs of empathy: the price of being human. J Socio Econ. 2001; 30:437-452.
11. Khademalhosseini M, Khademalhosseini Z, Mahmoodian F. Comparison of empathy score among medical students in both basic and clinical levels. J Adv Med Educ Prof. 2014;2(2):88-91. PMID: 25512926; PMCID: PMC4235551.
12. Bellini LM, Shea JA. Mood change and empathy decline persist during three years of internal medicine training. Acad Med. 2005;80(2):164–7. doi: 10.1097/00001888-200502000-00013.
13. Chen D, Lew R, Hershman W, Orlander J. A cross-sectional measurement of medical student empathy. J Gen Intern Med. 2007;22(10):1434–8. doi: 10.1007/s11606-007-0298-x.
14. Rahimi-Madiseh M, Tavakol M, Dennick R, Nasiri J. Empathy in Iranian medical students: a preliminary psychometric analysis and differences by gender and year of medical school. Med Teach. 2010;32:e471–e478. doi: 10.3109/0142159X.2010.509419.
15. Chatterjee A, Ravikumar R, Singh S, Chauhan PS, Goel M. Clinical empathy in medical students in India measured using the Jefferson Scale of Empathy-Student Version. J Educ Eval Health Prof. 2017; 14:33. doi: 10.3352/jeehp.2017.14.33.
16. Shashikumar R, Chaudhary R, Ryali VS, Bhat PS, Srivastava K, Prakash J, Basannar D. Cross-sectional assessment of empathy among undergraduates from a medical college. Med J Armed Forces India. 2014; 70:179–185. doi: 10.1016/j.mjafi.2014.02.005.
17. Baez S, Flichtentrei D, Prats M, Mastandueno R, Garcia AM, Cetkovich M, Ibanez A. Men, women…who cares?: a population-based study on sex differences and gender roles in empathy and moral cognition. PLoS One. 2017;12:e0179336. doi: 10.1371/journal.pone.0179336.
18. Andersen FA, Johansen AB, Søndergaard J, Andersen CM, Assing Hvidt E. Revisiting the trajectory of medical students' empathy, and impact of gender, specialty preferences and nationality: a systematic review. BMC Med Educ. 2020; 20:52. doi: 10.1186/s12909-020-1964-5.
19. Biswas B, Haldar A, Dasgupta A, Mallick N, Karmakar A. An epidemiological study on empathy and its correlates: a cross-sectional assessment among medical students of a government medical college of India. Indian J Psychol Med. 2018; 40:364-369. doi: 10.4103/IJPSYM.IJPSYM_109_18.