

Empathy and its Correlates among Undergraduate Medical Students at a Medical College in India

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Abstract

Introduction: Empathy is a highly desirable professional trait, since empathic communication skills promote patient satisfaction, establish trust, reduce anxiety, increase adherence to treatment regimens, improve health outcomes, as well as decreasing the likelihood of malpractice suits. It is beneficial to the physician as well, cognitively defined empathy can lead to personal growth, career satisfaction resulting from the optimal clinical outcomes.

Purpose: The purpose of the study was to assess empathy level of medical students and its correlates.

Methodology: A cross-sectional observational study was conducted among undergraduate medical students of Veer Chandra Singh Garhwali Government Institute of Medical Science and Research, Srinagar, Uttarakhand, with a survey tool employing Jefferson Scale of Physician Empathy (JSE-S). JSE-S comprising certain details such as age, gender, year of medical school, specialty of choice, and an inventory of 20 questions half of which are negatively phrased. The students recorded their response on a scale of 1 of the 7, provided on a Likert scale in response to each item (1 = strongly disagree and 7 = strongly agree). Scale is reversed (that is, 1 = strongly agree and 7 = strongly disagree) for the negatively phrased items.

Results: The mean empathy score among males was 103.4 (standard deviation [SD] – 17.33), and among females, it was 109.4 (SD – 15.37). In our study, this difference was found to statistically significant. A majority of students reported having made the decision to enter the medical profession on their own accord, $n = 355$ (68.5%). For the rest, it was either their family member's decision or a combined decision, $n = 66$, 12.7% and $n = 97$, 18.7%, respectively. A majority of students, $n = 360$, 69.5%, preferred to join a medical specialty involving direct patient contact.

Conclusion: The empathy score varied with gender, with a higher mean score for females. It was also more for those satisfied with their career choice compared to those who were unsatisfied. Semester wise, there was no increasing or decreasing pattern of scores and was found to be variable. An impetus for empathy was provided with the introduction of foundation course for medical students where life skills education is being imparted.

Key words: Empathy, Medical students, Choice of specialty

INTRODUCTION

Empathy is a highly desirable professional trait, since empathic communication skills promote patient satisfaction, establish trust, reduce anxiety, increase adherence to

treatment regimens, improve health outcomes, as well as decreasing the likelihood of malpractice suits.^[1-6] It is beneficial to the physician as well, cognitively defined empathy can lead to personal growth, career satisfaction resulting from the optimal clinical outcomes.^[7-9]

There is a conceptual ambiguity in terms of whether empathy is a cognitive (predominantly involves understanding another person's concerns) or an affective attribute (primarily involves feeling another person's pain and suffering)^[10-13] which is made clear in its definition "a predominantly cognitive (rather than an affective or emotional) attribute that involves understanding (rather

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than feeling) of the patient's experiences, concerns, and perspectives, combined with a capacity to communicate this understanding, and an intention to help."^[7,8,14] An alternate definition is "the ability to understand the patient's situation, perspective, and feelings (and attached meanings), communicate that understanding and check its accuracy, and act on that understanding with the patient in a helpful (therapeutic) way."

Empathy in medical students depends on many factors, that is, age, gender, year/semester of medical education, satisfaction with the decision of a medical career, specialty choice, quality of life, personality trait, and mental health.^[15-21] Many studies have reported that empathy scores of medical students have decreased with progression of medical training.^[21-25] Some proposed reasons for the decline in empathy over the years of medical education are less interaction with patients, lack of role models, and academic stress.^[26-29]

Empathy is a major component of an optimal doctor-patient relationship. Hence, the cultivation of empathy is one of the learning objectives proposed by the Medical Council of India for medical students which say that an understanding of empathy for the medical students will help keep the patient perspective in mind during their learning.^[30]

Some of the specific competencies that are advocated in the curriculum for medical graduates in India are – "Demonstrate empathy in patient encounters;" "Establish rapport and empathy with patients;" and "Display empathy in the care of patients with cancer."^[31]

Similar recommendations are laid out by the Association of American Medical Colleges (AAMC, 2004) for medical schools.^[32] In addition, the American Board of Internal Medicine (1983) recommended that humanistic attitudes, including empathy, should be instilled and assessed among residents as an essential part of their postgraduate medical education.^[32]

These recommendations by professional organizations indicate that it is important to study issues related to the assessment and factors affecting empathy of in-training and in-practice health professionals. Since, empathy is a cognitive element, it can be taught and measured. It should be integrated and regularly assessed in various stages of medical education as per recommendations of AAMC.^[33,34] The student version of the Jefferson Scale of Physician Empathy (JSE-S) was developed by the researchers associated with Jefferson Medical College in the United States to explicitly assess empathy in medical students. The JSE-S has high internal consistency, with a Cronbach's alpha

value of 0.80, and has been used before amongst medical students across the world, thereby generating comparable results from different cultural contexts.^[35]

There have been only a few published studies related to empathy and its correlates of medical and dental students of India.^[21,24,36-38] It is important to find empathy level of doctors and its correlates right from the beginning of their medical education to understand the reasons of the decline in the empathy level over the years of medical education, this information can help to foster an enabling environment to inculcate empathy as a cognitive ability in the medical curriculum. With this background, the current study was designed to assess empathy level of medical students and its correlates.

METHODOLOGY

Study Design

A cross-sectional observational study was conducted among undergraduate medical students of Veer Chandra Singh Garhwali Government Institute of Medical Science and Research (VCSGGIMSR), Srinagar, Uttarakhand, with a survey tool employing JSE-S.

MATERIALS AND METHODS

JSE-S comprising certain details such as age, gender, year of medical school, specialty of choice, and an inventory of 20 questions half of which are negatively phrased. The students recorded their response on a scale of 1 of the 7, provided on a Likert scale in response to each item (1 = strongly disagree and 7 = strongly agree). This scale is reversed (that is, 1 = strongly agree and 7 = strongly disagree) for the negatively phrased items. It was administered by sharing a link for the Google Forms containing the full questionnaire as is, along with two extra questions regarding whose choice was it to pursue a medical career and current place of residence were also asked as possible. Prior permission to use the questionnaire was obtained from the owner of the scale.^[39]

It is a 3-factor latent variable scale, with the three factors being "perspective taking," "compassionate care," and "standing in the patient's shoes" that have been validated.^[19,20,40,41]

All medical undergraduate students of VCSGGIMSR in 2020 were invited to participate in the study. A total of 518 students consented to participate and data were collected over a period of 3 months (August–October 2020). The students were sent the unique link of the Google Forms containing the full questionnaire including a declaration

of anonymity of data, explanation of the purpose of the study, and the voluntary nature of the participation. They indicated their consent by responding “yes” or “no” to the question – Do you wish to voluntarily participate in the above study? The submission link was kept active for the entire 3 months and the students were contacted twice through e-mail, urging them to participate.

Statistical Analysis

An Excel sheet was generated for the collected data which were handled using MS Excel software (Microsoft 365 version, Microsoft Corp., Redmond, Washington, USA) after verifying the integrity of the data and ruling out any missing data, it was then imported on to Statistical Package for the Social Sciences (IBM SPSS Statistics for Mac, version 21.0, Armonk, NY: IBM Corp.).

Since the scoring algorithm only allows for a maximum of four blank items (out of the 20 item JSE-S inventory), in which case, the missing values were replaced by the mean score of the rest of the items that the participant did respond to. However, if more than 4 items were missing, the form was deemed incomplete and removed from the analysis. Reverse-scored items were scored accordingly.

Descriptive analysis – mean empathy scores were calculated and tabulated for males and females, semester wise (first to ninth), the decision to become a doctor/join medical school was your own? (Yes, No, and Maybe), specialty of choice (people oriented, technology oriented, or others), career satisfaction (on a scale of 1 to five), and current place of residence (home, hostel, or other). Student’s *t*-test and analysis of variance were used to compare these means where appropriate with Bonferroni *post hoc* test. *P*-value 0.3 of <0.05 was considered to indicate statistical significance.

Ethical Approval

Prior ethical clearance was obtained from the Institutional Ethics Committee of VCSGGIMSR (vide ref no. MC/IEC/2020/134 dated 10/06/2020).

RESULTS

The mean age of the participants was 21.4 years (standard deviation [SD] 2.43), range 17–28 years. The JSE-S consists of 20 questions scored on a 7-point scale, hence, the empathy score ranged from 20 to 140. In our study sample, the mean empathy score was found to be 106.6 (SD 16.58), range 47–140.

Out of 518 participants, 244 were male (47.1%) and the rest were female (52.9%). Most of the students were in the 1st, 4th, or 6th semester (*n* = 106, 20.5%; *n* = 122, 23.6%; and *n* =

113, 21.8%, respectively). A majority of students reported having made the decision to enter the medical profession on their own accord, *n* = 355 (68.5%). For the rest, it was either their family member’s decision or a combined decision, *n* = 66, 12.7% and *n* = 97, 18.7%, respectively.

A majority of students, *n* = 360, 69.5%, preferred to join a medical specialty involving direct patient contact such as medicine, surgery, dermatology, or emergency medicine. Eighty out of the 518 (15.4%) students have not decided which specialty they will join. Fewer number of students decided to join specialties involving indirect patient contact like pathology, *n* = 46, 8.9% [Table 1].

Many students were fully satisfied with their career choice, *n* = 190 (36.7%). The mean empathy score among males and females was 103.4 (SD 17.33) and 109.4 (SD 15.37), respectively. This difference was found to be statistically significant (*P* < 0.05). There was no trend whether upward or downward in the mean empathy scores across the semesters, but it differed with statistical significance among the various semesters (*P* < 0.05) [Figure 1 and Table 2]. Mean empathy score was much higher in students who chose to become a doctor on their own (109.3) as compared to those who became doctors for their family members’ decision (97.4). This difference was found to be statistically significant (*P* < 0.05).

There was no statistically significant difference in the mean empathy score of students based on their choice of

Table 1: Distribution of the participants as per the sex, semester, decision to become a doctor, and the choice of specialty

| Variable | Attribute | Number | Percentage |
|-------------------------------------|-------------------|--------|------------|
| Sex | Male | 244 | 47.1 |
| | Female | 274 | 52.9 |
| Semester | 1 | 106 | 20.5 |
| | 2 | 55 | 10.6 |
| | 3 | 27 | 5.2 |
| | 4 | 122 | 23.6 |
| | 5 | 32 | 6.2 |
| | 6 | 113 | 21.8 |
| | 7 | 32 | 6.2 |
| | 8 | 31 | 6.0 |
| Decision | Yes | 355 | 68.5 |
| | No | 66 | 12.7 |
| | Maybe | 97 | 18.7 |
| Choice of the type of specialty | No direct contact | 32 | 6.2 |
| | Indirect contact | 46 | 8.9 |
| | Direct contact | 360 | 69.5 |
| | Undecided | 80 | 15.4 |
| Satisfaction with the career choice | 1 | 44 | 8.5 |
| | 2 | 44 | 8.5 |
| | 3 | 103 | 19.9 |
| | 4 | 137 | 26.4 |
| | 5 | 190 | 36.7 |
| Total | | 518 | 100 |

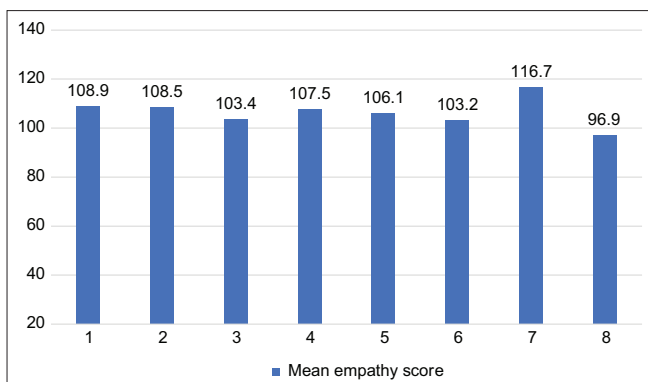


Figure 1: Mean empathy score among students in different semester of study

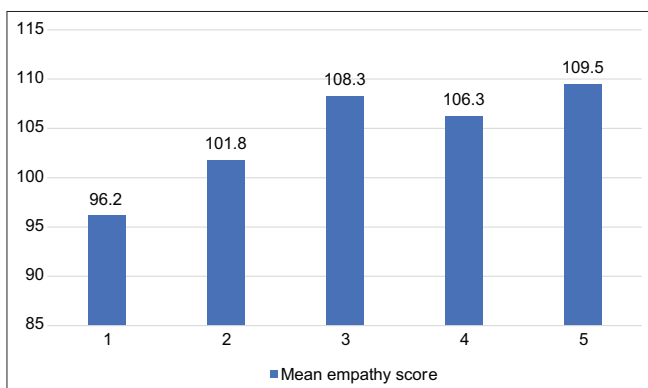


Figure 2: Mean empathy score among students as per their satisfaction with their career choice

Table 2: Comparison of mean empathy score among the participants

| Variable | Attribute | Mean empathy score | SD | P-value |
|-------------------------------------|-------------------|--------------------|-------|---------|
| Sex | Male | 103.4 | 17.33 | 0.000* |
| | Female | 109.4 | 15.37 | |
| Semester | 1 | 108.9 | 13.64 | 0.000** |
| | 2 | 108.5 | 19.86 | |
| | 3 | 103.4 | 20.65 | |
| | 4 | 107.5 | 12.36 | |
| | 5 | 106.1 | 23.94 | |
| | 6 | 103.2 | 15.82 | |
| | 7 | 116.7 | 14.60 | |
| | 8 | 96.9 | 18.90 | |
| Decision to be a doctor | Yes | 109.3 | 13.42 | 0.000** |
| | No | 97.4 | 20.33 | |
| | Maybe | 103.0 | 20.92 | |
| Choice of the type of specialty | No direct contact | 104.1 | 24.02 | 0.166 |
| | Indirect contact | 102.1 | 19.52 | |
| | Direct contact | 107.0 | 15.90 | |
| | Undecided | 108.3 | 13.76 | |
| Satisfaction with the career choice | 1 | 96.2 | 25.03 | 0.000** |
| | 2 | 101.8 | 20.44 | |
| | 3 | 108.3 | 14.29 | |
| | 4 | 106.3 | 15.16 | |
| | 5 | 109.5 | 14.09 | |
| Total | | 518 | 100 | |

(*): Statistical significance/t-test, (**): Statistical significance/ANOVA test

specialty whether it involved direct, indirect, or no patient contact, it was 107, 102.1, and 104.1, respectively, with $P > 0.05$.

As the satisfaction of career choice increased, so did the mean empathy score of the students and this difference was highly statistically significant (<0.05) [Figure 2 and Table 2].

DISCUSSION

A total of 518 medical students participated in the study to assess the empathy level and its determinants. The mean empathy score among males was 103.4 (SD – 17.33), and among females, it was 109.4 (SD – 15.37). In our study, this difference was found to statistically significant. Similar results have been reported by many other studies done in India, Bangladesh, and the USA.^[19,21,28] There could be many reasons for this difference but the most prominent one as suggested by some studies could be the traditional gender roles.^[42] However, there are some studies which refute this notion that empathy among medical students varies by sex.^[20] Therefore, further studies with higher sample size need to be conducted to better understand this relationship.

Satisfaction with career choice had a significant impact on the empathy scores in this study which was coherent with the findings of another study by Biswas *et al.*^[36] The study by Biswas *et al.*^[36] finds constant decreasing empathy scores with each higher semester. Semester wise, the empathy scores in our study were variable.

In this study, there was no statistically significant difference in the mean empathy score of students based on their choice of specialty, however, some other studies^[36,43] show significant difference between the choice of people-oriented versus technology-oriented medical disciplines as a future career.

CONCLUSION

The empathy score varied with gender, with a higher mean score for females. It was also more for those satisfied with their career choice compared to those who were unsatisfied. Semester wise, there was no increasing or decreasing pattern of scores and was found to be variable. An impetus for empathy was provided with the introduction of foundation course for medical students where life skills education is being imparted. This will go a long way in laying the foundations of empathetic care to patients and their families by health-care professionals in future.

REFERENCES

- Butow PN, Maclean M, Dunn SM, Tattersall MH, Boyer MJ. The dynamics of change: Cancer patients' preferences for information, involvement and support. *Ann Oncol* 1997;8:857-63.
- Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician-patient communication; the relationship with malpractice claims among primary care physicians and surgeons. *J Am Med Assoc* 1997;277:553-9.
- Roter DL, Hall JA, Merisca R, Nordstrom B, Cretin D, Svarstad B. Effectiveness of interventions to improve patient compliance a meta-analysis. *Med Care* 1998;36:1138-61.
- Brownell AKW, Côté L. Senior residents' views on the meaning of professionalism and how they learn about it. *Acad Med* 2001;76:734-7.
- Canale S Del, Louis DZ, Maio V, Wang X, Rossi G, Hojat M, *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;87:1243-9.
- Glaser KM, Markham FW, Adler HM, McManus PR, Hojat M. Relationships between scores on the Jefferson Scale of physician empathy, patient perceptions of physician empathy, and humanistic approaches to patient care: A validity study. *Med Sci Monit* 2007;13:CR291-4.
- Hojat M. Empathy in patient care: Antecedents, development, measurement, and outcomes. In: *Empathy in Patient Care: Antecedents, Development, Measurement, and Outcomes*. New York: Springer; 2007. p. 1-283.
- Hojat M. Empathy in health professions education and patient care. In: *Empathy in Health Professions Education and Patient Care*. Berlin: Springer International Publishing; 2016. p. 1-450.
- Hojat M, Vergare MJ, Maxwell K, Brainard G, Herrine SK, Isenberg GA, *et al.* The devil is in the third year: A longitudinal study of erosion of empathy in medical school. *Acad Med* 2009;84:1182-91.
- Sinclair S, Beamer K, Hack TF, McClement S, Bouchal SR, Chochinov HM, *et al.* Sympathy, empathy, and compassion: A grounded theory study of palliative care patients' understandings, experiences, and preferences. *Palliat Med* 2017;31:437-47.
- Halpern J. What is clinical empathy? *Gen Intern Med* 2003;18:670-4.
- Newton BW. Walking a fine line: Is it possible to remain an empathic physician and have a hardened heart? *Front Hum Neurosci* 2013;7:233.
- Emotional and Cognitive Empathy in First-Year Medical Students; 2020. Available from: <https://www.hindawi.com/journals/isrn/2013/801530>. [last accessed on 2020 Aug 07].
- Hojat M, Mangione S, Nasca TJ, Cohen MJ, Gonnella JS, Erdmann JB, *et al.* The Jefferson scale of physician empathy: Development and preliminary psychometric data. *Educ Psychol Meas* 2001;61:349-65.
- Sng G, Tung J, Ping YS, Lee SS, Win MT, Hooi SC, *et al.* Complex and novel determinants of empathy change in medical students. *Korean J Med Educ* 2016;28:67-78.
- Santos MA, Grosseman S, Morelli TC, Giuliano IC, Erdmann TR. Empathy differences by gender and specialty preference in medical students: A study in Brazil. *Int J Med Educ* 2016;7:149-53.
- Bertram K, Randazzo J, Alabi N, Levenson J, Doucette JT, Barbosa P. Strong correlations between empathy, emotional intelligence, and personality traits among podiatric medical students: A cross-sectional study. *Educ Heal Chang Learn Pract* 2016;29:186-94.
- Park KH, Kim DH, Kim SK, Yi YH, Jeong JH, Chae J, *et al.* The relationships between empathy, stress and social support among medical students. *Int J Med Educ* 2015;6:103-8.
- Empathy in Undergraduate Medical Students of Bangladesh: Psychometric Analysis and Differences by Gender, Academic Year, and Specialty Preferences; 2020. Available from: <https://www.hindawi.com/journals/isrn/2014/375439>. [Last accessed on 2020 Aug 08].
- 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(11):e471-8.
- Shashikumar R, Chaudhary R, Ryalı VS, Bhat PS, Srivastava K, Prakash J, *et al.* Cross sectional assessment of empathy among undergraduates from a medical college. *Med J Armed Forces India* 2014;70:179-85.
- 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;2:88-91.
- Benabbas R. Empathy in Iranian medical students: A comparison by age, gender, academic performance and specialty preferences. *Med J Islam Repub Iran* 2016;30:439.
- 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.
- Hasan S, Al-Sharqawi N, Dashti F, Abdulaziz M, Abdullah A, Shukkur M, *et al.* Level of empathy among medical students in Kuwait University, Kuwait. *Med Princ Pract* 2013;22:385-9.
- Magalhães E, Salgueira AP, Costa P, Costa MJ. Empathy in senior year and first year medical students: A cross-sectional study. *BMC Med Educ* 2011;11:52.
- Vallabh K. Psychometrics of the student version of the Jefferson scale of physician Empathy (JSPE-S) in final-year medical students in Johannesburg in 2008. *S Afr J Bioeth Law* 2011;4:63-8.
- Neumann M, Edelhäuser F, Tauschel D, Fischer MR, Wirtz M, Woopen C, *et al.* Empathy decline and its reasons: A systematic review of studies with medical students and residents. *Acad Med* 2011;86:996-1009.
- Roff S. Reconsidering the "decline" of medical student empathy as reported in studies using the Jefferson scale of physician empathy-student version (JSPE-S). *Med Teach* 2015;37:783-6.
- Medical Council of India. Attitude, Ethics and Communication AETCOM. New Delhi: Medical Council of India; 2018.
- Competency Based Undergraduate Curriculum for the Indian Medical Graduate. New Delhi: Medical Council of India; 2019.
- Association of American Medical Colleges. Available from: <https://www.aamc.org>. [Last accessed on 2020 Aug 07].
- Cooke M, Irby DM, Sullivan W, Ludmerer KM. Medical education: American medical education 100 years after the flexner report. *N Engl J Med* 2006;355:1339-44.
- Norcini JJ, McKinley DW. Assessment methods in medical education. *Teach Teach Educ* 2007;23:239-50.
- Hojat M, Gonnella JS, Nasca TJ, Mangione S, Vergare M, Magee M. Physician empathy: Definition, components, measurement, and relationship to gender and specialty. *Am J Psychiatry* 2002;159:1563-9.
- 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;40:364-9.
- Narang R, Mittal L, Saha S, Aggarwal V, Sood P, Mehra S. Empathy among dental students: A systematic review of literature. *J Indian Soc Pedod Prev Dent* 2019;37:316-26.
- Rajput S, Puranik M, Shanbhag N, Kumar A. Factors affecting empathy among Indian dentists. *Indian J Dent Res* 2020;31:14-21.
- Jefferson Scale of Empathy. Available from: <https://www.jefferson.edu/academics/colleges-schools-institutes/skmc/research/research-medical-education/jefferson-scale-of-empathy.html>. [Last accessed on 2020 Aug 08].
- Hojat M, DeSantis J, Shannon SC, Mortensen LH, Speicher MR, Bragan L, *et al.* The Jefferson scale of empathy: A nationwide study of measurement properties, underlying components, latent variable structure, and national norms in medical students. *Adv Heal Sci Educ* 2018;23:899-920.
- Newton BW, Barber L, Clardy J, Cleveland E, O'Sullivan P. Is there hardening of the heart during medical school? *Acad Med* 2008;83:244-9.
- Christov-Moore L, Simpson EA, Coudé G, Grigaityte K, Iacoboni M, Ferrari PF. Empathy: Gender effects in brain and behavior. *Neurosci Biobehav Rev* 2014;46:604-27.
- Pantovic M, Dunjic-Kostic B, Gligoric M, Lačković M, Damjanovic A, Ivković M. Empathy predicting career choice in future physicians. *Engrami*. 2015;37:37-48.

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