## ORIGINAL ARTICLE

# WALKING A MILE IN PATIENTS' MOCCASINS: MEASURING EMPATHY AMONG INDIAN MEDICAL STUDENTS

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## ABSTRACT

**Introduction**: Empathy is the ability to understand others' experiences and emotional states from their perspective. It is considered as a part and parcel of healthy doctor-patient relationship. The assessment of empathy among undergraduate medical students is an important step towards yielding a better fruitage from medical education in the form of empathetic doctors. Objectives of the study were to assess the empathy level and its determinants among undergraduate medical students.

**Methodology**: This study was conducted among 351 undergraduate medical students studying at Dehradun by using the "Jefferson Scale of Physician Empathy-Student Version (JSPE-S)" and analyzed by SPSS-22.

**Results**: The arithmetic mean (±SD) of empathy scores was 98.89±12.9. Compared with male students, empathy scores were significantly higher in female students ($p<0.05$ by Independent sample t test). One way ANOVA followed by Post Hoc test revealed a peculiar finding that empathy is more on initial clinical exposure but decreases as the clinical experience increases. The variation in empathy scores according to the future specialty plans was inconclusive.

**Conclusion**: This study showed a slightly low mean empathy score as compared to similar studies. Gender and clinical experience were found to be associated with empathy. Further studies are recommended to explore other determinants of empathy.

**Keywords:** Empathy, undergraduate, Jefferson Scale of Physician Empathy-Student Version (JSPE-S), clinical experience, future specialty plans

## INTRODUCTION

"I do not ask the wounded person how he feels; I myself become the wounded person."−Walt Whitman

"Empatheia" is a Greek word, meaning affection or passion with a quality of suffering, from which the word "empathy" has been derived.[1] Empathy connotes to the ability of understanding others' experiences and emotional states from their perspective or frame of reference, i.e. the ability to place oneself in another's position. It has two major components: affective or emotional empathy and cognitive empathy.[2] Unlike sympathy which is just a feeling of compassion or concern for another; empathy is the true feeling and understanding of what another person is going through. In the context of doctor-patient relationship, empathy has been defined as "a predominantly cognitive (rather than emotional) attribute that involves an understanding (rather than feeling) of patient's experiences, concerns and perspectives, combined with a capacity to communicate this understanding with an intention to help by preventing and alleviating pain and suffering.[3]

Empathy is considered as an essential component of healthy doctor-patient relationship. This understanding can be conveyed verbally as well as non-verbally through words of comfort, body gestures and positive non-verbal feedback. It, being a desirable quality for clinicians, should be developed during medical education. Hozat had found in his study that medical graduates with higher empathy did better in clinical competence than in academic competence.[4] Other studies have also emphasized that empathy promotes physician-patient satisfaction, treatment compliance, better clinical outcome as well as prevents malpractices.[5] Therefore, measuring empathy in medical students is becoming important. Studies in various countries have shown somewhat discordant results in empathy level in terms of clinical experience, choice of specialty and gender.[6-10]

Medical curriculum in India differs from other countries in that clinical rotation starts from 2nd year and there is no structured course in basic humanities. In

view of the importance of empathy in clinical practice for better patient care and paucity of literature from India, the present study was conducted with the objectives of assessing the empathy level and its determinants among undergraduate medical students.

## METHODOLOGY

The present study was conducted among the undergraduate medical students (MBBS students of 1st, 2nd and 3rd year) studying at Dehradun, India. Permission from research and ethical committee of the institute was taken before starting the study. The English version of Jefferson Scale of Physician Empathy-Student Version (JSPE-S) was used after obtaining permission from the authorities of JSPES. It is a 20 item psychometrically validated instrument consisting of 20 statements on a 7 point Likert scale (1=strongly disagree to 7=strongly agree), scores thus ranging from 20 -140. Higher scores represent greater empathy level. Permission for including a maximum of 400 participants was obtained from the authors of JSPES. All the students present in the respective classes were included in the study after obtaining their informed consent. Participants were given 15 minutes to complete the questionnaire after providing them the requisite information. The participants were instructed not to write their names. Special unique coding was given to each participant to maintain anonymity and confidentiality. Participants with 80% response rate, i.e., answering at least 16 items out of 20, were considered for data analysis. After excluding the incomplete forms, the final sample size was 351 (Fig. 1).

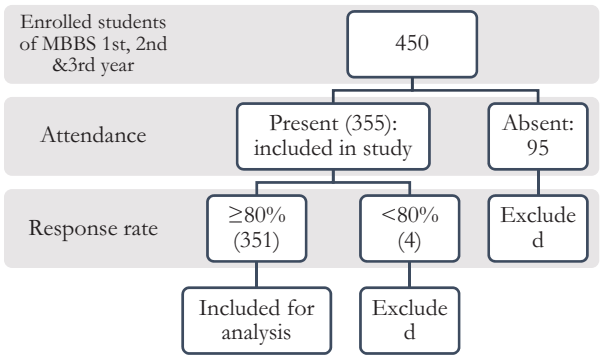


**Figure 1: Inclusion and exclusion criteria**

Data were analyzed by using SPSS software (version-22). 10 items out of 20 were negatively worded and were reverse coded. Empathy scores were expressed as mean (±SD). Independent samples t-test and ANOVA with post hoc test were used to find out the determinants of empathy. Statistical significance was checked at 5% level of significance.

## RESULTS

The arithmetic mean (±SD) of empathy scores was 98.89±12.9, the minimum empathy score being 54 and the maximum being 130.

**Table 1: General profile of study subjects**

| Variables | No. (%)(N=351) |
|---|---|
| **Gender** | |
| Male | 138 (39.3) |
| Female | 213 (60.7) |
| **Age (years)** | |
| <22 | 335 (95.4) |
| 22-24 | 16 (4.6) |
| **MBBS year** | |
| 1st | 87 (24.8) |
| 2nd | 138 (39.3) |
| 3rd | 126 (35.9) |
| **Area of interest** | |
| Medical | 143 (40.7) |
| Surgical | 149 (42.5) |
| Technical | 29 (8.3) |
| Undecided | 30 (8.5) |

Table 1 shows that out of total 351 students selected for analysis, 213 (60.7%) were females and 138 (39.3%) were males. Majority of the students were <22 years of age. The representation was maximum from 2nd year followed by 3rd year and 1st year MBBS students. 42.5% of the students wanted to make surgical branches as their area of specialty followed closely by medical branches (40.7%), 8.3% were planning to opt for technical branches and the rest (8.5%) were undecided.

**Table 2: Relation of age and gender with empathy level among undergraduate medical students**

| Determinants | Mean empathy score (±SD) | p value |
|---|---|---|
| **Gender** | | |
| Male | 96.77 (±11.8) | **0.01*** |
| Female | 100.26 (±13.5) | |
| **Age (years)** | | |
| <22 | 99.16 (±13.0) | 0.07** |
| 22-24 | 93.26 (±9.5) | |

* Equal variances assumed (Levene's test p value: 0.09), independent samples t-test

** Equal variances assumed (Levene's test p value: 0.15), independent samples t-test

Tables 2 and 3 show the association between various factors/determinants and empathy scores among undergraduate medical students. The determinants of empathy studied under the Jefferson Scale of Physician Empathy-Student Version (JSPE-S) were gender, age, area of interest for future specialty and the year of study in MBBS curriculum. Homogeneity of variance was tested by Levene's test. The mean empathy score was found to be more among females

than males and this difference was statistically significant (p=0.005) as tested by independent samples t-test. The mean empathy score was found to be more among younger students but the difference in age was not found to be statistically significant. Those students who wanted to do specialization in medical branches showed the highest mean empathy scores followed by those who were undecided, which was closely followed by surgical branches and the least score was for technical branches, but these differences in mean empathy scores were not found to be statistically significant. Area of interest for future specialty was also re-categorized as people-oriented and technology-oriented, excluding those who were undecided.

**Table 3: Relation of area of interest and MBBS year with empath level among undergraduate medical students**

| Determinants | Mean empathy score (±SD) | F statistic | p value |
|---|---|---|---|
| **Area of interest** | | | |
| Medical | 99.79 (±12.7) | 0.86 | 0.46* |
| Surgical | 98.70 (±13.4) | | |
| Technical | 95.63 (±12.5) | | |
| Undecided | 98.89 (±12.9) | | |
| **MBBS year** | | | |
| 1st | 99.24 (±11.8) | 3.36 | **0.04**** |
| 2nd | 100.72 (±12.9) | | |
| 3rd | 96.64 (±13.6) | | |

*Equal variances assumed (Levene's test p value: 0.89), One way ANOVA; **Equal variances assumed (Levene's test p value: 0.89), One way ANOVA

Posthoc: 1st yr vs 2nd yr mean diff 1.5 p value 0.70; 1st yr vs 3rd yr mean diff 2.6 p value 0.35; 2nd yr vs 3yr mean diff 4.1 p value 0.04

Although the students with people-oriented branch preference had higher mean empathy score but the difference was not found to be statistically significant. It was found by applying one way ANOVA that the difference between the mean empathy scores of students of different MBBS years was significant but Scheffe post hoc test revealed that the difference was significant only between 2nd and 3rd year. It can be interpreted with this finding that empathy is more on initial clinical exposure but decreases as the clinical experience increases.

## DISCUSSION

The present study on measuring empathy among 351 undergraduate medical students (138 males, 213 females), conducted by using the Jefferson Scale of Physician Empathy-Student Version (JSPE-S), showed that the mean empathy score was 98.89±12.9 with minimum and maximum scores being 54 and 130 respectively. The mean empathy score was comparable to that calculated in an Indian study done in Nagpur (99.25±13.81)[11] but it was lower as compared to another Indian study conducted at Vijaywada (103.29±13.3).[2] This difference might have arisen as the latter study included interns and post graduate students as well. The range of empathy score in the afore mentioned studies were 63-125 and 47-136 respectively. The mean empathy score in Indian medical students was found to be less as compared to some studies done in foreign countries like Australia (109.07±14.94),[6] South Africa (107±10.9)[12] and Brazil (119.7±9.9).[13] This could point towards cross cultural differences in empathy level or difference in medical curriculum. Teaching humanities is not a part of medical curriculum in India. The mean empathy score was found to be quite low (61.11±2.31) in a study performed in Iran.[9] Low empathy levels were also found in some studies done among dental students.[14, 15]

Female students were found to be more empathetic than male students, the mean empathy scores being 100.26 (±13.5) and 96.77 (±11.8) respectively. This finding was supported by many earlier studies.[2, 5, 8, 11, 13, 16-24] Some authors have hypothesized that extrinsic as well as intrinsic factors might be the reason for this. Extrinsic factors include the role of females as care taker while intrinsic factors include the biological and genetic make-up.[8, 12, 13, 21, 25] Correlation between activation of right hemisphere and empathy was found exclusively in females in a study.[26] However, there are some studies where the relation between empathy and gender could not be appreciated.[27-30] Hence, cultural and environmental influences might also be one of the factors determining empathy.

This study revealed that empathy is more on initial clinical exposure but decreases as the clinical experience increases. Some studies have shown that empathy decreases with increasing clinical exposure among MBBS students.[5, 16-18] Mostafa et al interpreted that empathy gradually increased after clinical training in medical college.[7] In a Brazilian study, empathy was found to be high throughout the medical course.[13] No association was found between empathy and years of medical education in a study by Murthy et al.[2] These variations might point towards the differences in the medical curriculum in different countries. This study did not find any conclusive association between future choice of specialty and empathy. Similar results were found in some other studies too[7,8] but the studies done in Brazil, Pune and Boston university show contradictory findings where students preferring people-oriented branches were more empathetic than those opting for technical branches.[5, 13, 16]

In conclusion, this study showed a slightly low mean empathy score as compared to similar studies. Females were more empathetic than males. Empathy

level was shown to fall with increasing clinical experience. The association between empathy level and choice of future specialty could not be determined conclusively.

It was a small-scale study; the results may not be representative of empathy levels among all Indian medical students. Multi-centric studies among Indian medical students are recommended for assessing the empathy level and its determinants. Longitudinal studies would be more helpful to identify the trend of change in empathy level during the various phases of medical education.

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