

## Assessment of empathy among undergraduate medical students

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### Abstract

**Background:** Empathy is the ability to understand and share the feelings of others. Empathy is the cornerstone of the physician –patient relationship. Empathy is a desirable quality among clinicians and can be developed during medical education.

**Objectives:** To measure the mean score of empathy among medical students and to compare the score of empathy among various semesters and among male and female students.

**Method:** A cross sectional questionnaire based study was conducted among 174 undergraduate medical students from IV, VI and VIII semesters at NKP Salve Institute of Medical Sciences and research center, Nagpur. The assessment of empathy was done by using the Jefferson's scale of Physician's empathy –student version. Data was analyzed by using T test and ANOVA test. The total score possible ranges from 20-140.

**Results:** Mean score of empathy was found to be  $99.25 \pm 13.81$ . The score range was from 63-125. Mean score of empathy was found to be better among female students ( $101.30 \pm 14.534$ ) as compared to male students ( $97.05 \pm 12.717$ ). Difference between scores among male and female students was found to be statistically significant ( $T=2.05$ ,  $p$  value  $<0.05$ ). When mean empathy scores were compared among various semesters by ANOVA test, it was not found to be statistically significant.

**Conclusions:** Female students were found to be more empathetic as compared to the male students. Females are more receptive to emotions than males. There is no decline or increase in the mean empathy scores among various semesters.

**Keywords:** Empathy, Medical students, Mean score, Jefferson's scale

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### Introduction

The word empathy is derived from Greek word 'empathia' meaning affection or passion with a quality of suffering<sup>(1)</sup>. Empathy is the ability to understand and share the feelings of others. It is the power of entering into others' personality and imaginatively experiencing their emotional state. Empathy is the cornerstone of the physician –patient relationship. It is the physician's ability to cognitively recognize a patient's perspectives and experiences and convey such an understanding back to patient. Hojat et al define empathy as 'a predominantly cognitive attribute that involves an understanding of the patient's experiences, concerns, and perspectives combined with a capacity to communicate this understanding and an intention to help'<sup>(2)</sup>. It is the ability to 'stand in the shoes of another'. Empathy is considered to be associated with better compliance, satisfaction and clinical outcomes<sup>(3)</sup>. Both empathy and sympathy involves sharing, but the concept of empathy lies in cognitive understanding whereas sympathy involves sharing emotions with the patients.

Hojat had found in a study that medical graduates with higher empathy did a better in clinical competence than in academic competence<sup>(4)</sup>. There are various factors determining empathy, such as age, gender, family background, culture, intelligence, emotional stability and education. Studies suggest level of empathy was

found to be more among female students than male students<sup>(1,3,5, 6,7,8,9,10,11,12)</sup>.

One of the major tasks of medical education is to maintain and increase empathy in medical students for patients. Empathy is essentially a desirable quality among clinicians and can be developed during medical education. But various researches suggest that empathy in medical students decreases during the course of medical training<sup>(5,9,10)</sup>. The work related challenges including long work hours and sleep deprivation are reasons believed to contribute to this decline.

Such studies are not conducted among medical students from Central India. So the present study was conducted to find out level of empathy among undergraduate students in a medical college and to compare the scores of empathy among various semesters and among male and female students.

### Aims and Objectives

**Aim:** Assessment of empathy among medical students

#### Objectives:

1. To measure the mean score of empathy among medical students.
2. To compare the score of empathy among various semester students.
3. To compare the score among male and female students

## Material and Methods

The study is a cross sectional study conducted among undergraduate medical students at N K P Salve Institute of Medical Sciences and Research center attached to a tertiary care hospital. After taking permission from IEC, the project was started. The students were briefly explained about the nature of the study. They were assured of keeping the contents confidential. After taking informed consent, the information was collected by using pre-tested self-administered questionnaire. Students of IV, VI and VIII semesters willing to participate were included in the study. Total number of students was 174. The questionnaire consisted of information such as student's age, sex and semester along with Jefferson's scale of physician empathy (JSPE)-student version. The students did not need to write or sign their names.

JSPE-student version is a valid and reliable scale used throughout the world and specially designed to study empathy among medical students. The instrument consists of 20 items answered on 7-point Likert scale which are scored from 1 (strongly disagree) to 7 (strongly agree). Among 20 questions, 10 negatively worded items in the scale were reverse scored. They are question number 1, 2, 7, 9, 10, 12, 15, 16, 19 and 20. The respondent can indicate their level of agreement to each statement. The total score ranges from 20-140. Level of empathy is directly proportional to the score.

Data was entered in the excel sheet. Mean score of empathy was calculated. Comparison between gender and empathy score was analyzed by t test and comparison between various semesters and empathy score was analyzed by ANOVA by using SPSS software.

## Results

**Socio-demographic data:** Total 174 students participated in the study. Out of 174 students, 84 (48.28%) were male students and 90 (51.72%) were female students. 42(24.13%) students were from IV semester, 106(60.92%) from VI and 26 (14.95%) from VIII semester. Mean age of student was  $21.011 \pm 1.21$ . Age ranged from 19 to 23 years.

## Mean score of empathy

**Table 1: Mean Score of empathy for each question**

	Question	Mean	SD	Median
1	My understanding of how my patients and their families feel <b>do not</b> influence medical or surgical treatment	3.62	1.861	3
2	I believe that emotion has <b>no</b> place in the treatment of medical illness	4.14	2.144	5
3	My patients value my understanding of their feelings, which is therapeutic in its own right	5.72	1.194	6
4	Empathy is a therapeutic skill without which success in treatment is limited	5.84	1.257	6
5	I believe that empathy is an important therapeutic factor in medical or surgical treatment	5.77	1.233	6
6	My patients feel better when I understand their feelings	6.29	1.090	7
7	Patients' illnesses can be cured only by medical or surgical treatment; therefore, emotional ties to my patients <b>do not</b> have a significant influence on medical or surgical outcomes	4.93	1.777	5
8	An important component of the relationship with my patients is my understanding of their emotional status, as well as that of their families	5.64	1.443	6
9	I <b>do not</b> allow myself to be influenced by strong personal bonds between my patients and their family members	3.36	1.863	3
10	Attentiveness to my patients' personal experiences <b>does not</b> influence treatment outcome	4.31	1.979	5
11	I try to think like my patients in order to render better care	5.29	1.512	6

12	I consider understanding my patients' body language as important as verbal communication in caregiver-patient relationships	5.97	1.153	6
13	I try to understand what is going on in my patients' minds by paying attention to their nonverbal cues and body language	5.92	1.165	6
14	I try to imagine myself in my patients' shoes when providing care to them	5.21	1.593	6
15	I try <b>not</b> to pay attention to my patients' emotions in history taking or in asking about their physical health	4.50	1.996	5
16	It is <b>difficult</b> for me to view things from my patients' perspectives	3.62	1.705	3
17	I have a good sense of humour, which I think contributes to a better clinical outcome	5.40	1.397	6
18	Because people are different, it is <b>difficult</b> for me to see things from my patients' perspectives	4.11	1.740	4
19	Asking patients about what is happening in their personal lives is <b>not</b> helpful in understanding their physical complaints	4.91	1.829	5
20	I <b>do not</b> enjoy reading nonmedical literature and the arts	4.70	2.294	6

Mean score of empathy was found to be  $99.25 \pm 13.81$ . The score range was from 63-125. Score of empathy was found to be better ( $6.29 \pm 1.090$ ) for question no. 6 ('my patients feel better when I understand their feelings'). Score was found to be poor with question 1, 9 and 16 (My understanding of how my patients and their families feel **do not** influence medical or surgical treatment and I **do not** allow myself to be influenced by strong personal bonds between my patients and their family members, It is **difficult** for me to view things from my patients' perspectives).

#### Comparison of empathy scores among male and female students

**Table 2: Comparison of scores of empathy among males and females**

No.	Sex	No.	Mean score	SD	Std error of mean	T test	P value
1	Male	84	97.05	12.717	1.388	-2.05	*0.042
2	Female	90	101.30	14.534	1.532		

\*statistically significant

Mean score of empathy was found to be better among female students ( $101.30 \pm 14.534$ ) as compared to male students ( $97.05 \pm 12.717$ ). Difference between scores among male and female students was found to be statistically significant ( $T=2.05$ ,  $p$  value  $< 0.05$ ). Female students were found to be more empathetic than male students. Females are more receptive to emotions than males. This may be the reason for present study finding.

#### Comparison of empathy scores among students of various semesters

**Table 3: Empathy scores among various semesters**

Semester	N	Mean	Std. Deviation	Std. Error
iv	42	96.05	15.308	2.362
vi	106	100.57	12.877	1.251
viii	26	99.04	14.666	2.876
Total	174	99.25	13.813	1.047

**Table 4: Comparison of empathy scores among various semesters**

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	615.470	2	307.735	1.624	0.200 NS
Within Groups	32394.904	171	189.444		
Total	33010.374	173			

NS-Not significant

Score of empathy was found to be more among students from VI and VIII semester students ( $100.57 \pm 12.877$  and  $99.04 \pm 14.66$  respectively) as compared with IV semester students ( $96.05 \pm 15.308$ ). When variance in mean empathy scores was compared among various semesters with ANOVA test, it was not found to be statistically significant. This may be due to less sample size in VIII and IV semester students.

### Discussion

In present study Mean score of empathy was found to be  $99.25 \pm 13.813$ . Shashikumar et al<sup>(5)</sup> conducted a cross sectional study to assess empathy among medical college students. Mean empathy score was found to be  $102.91 \pm 19.217$ . Murthy PS et al<sup>(12)</sup> conducted a study in Indian medical students and found mean empathy score of  $103 \pm 103.3$ . This is comparable with present study findings.

Mean score of empathy was found to be more among studies conducted in Australia<sup>(6)</sup>, South Africa<sup>(7)</sup> and Bangladesh<sup>(3)</sup> ( $109.07 \pm 14.937$ ,  $107 \pm 10.9$  and  $110.41 \pm 13.59$  respectively). This is contradictory to present study findings. The differences may be attributed to socio-cultural influences impacting expression of empathy in different cultural settings. In Indian settings there is more heavily oriented science based curriculum and admission system into medical school based on it. Since the intake is determined by scores in the entrance examination and no emphasis is placed on all round development before entry into medical school<sup>(12)</sup>.

Mean empathy score was found to be less in studies conducted among dental students<sup>(13,14)</sup>. This is in contradictory to the present study findings.

Mean score of empathy was found to be better among female students ( $101.30 \pm 14.534$ ) as compared to male students ( $97.05 \pm 12.717$ ) and it was found to be statistically significant. Females are more empathetic than males. Many authors<sup>(3,5,6,7,8,9,10,11,12)</sup> have reported similar study finding. Women show a greater understanding of emotional support which is important to develop interpersonal relationship with the patient. This may be the reason for study finding. Among the studies<sup>(13,14)</sup> conducted in dental students, male students were found to be more empathetic than female students. This is in contradictory to the present study finding.

Mean score of empathy was found to be more among VI and VIII semester students ( $100.5$  and  $99.04$  respectively) as compared with IV semester students ( $96.05$ ). Statistically significant difference was not found in mean empathy scores among various semesters.

Murthy PS et al<sup>(12)</sup> and Iman H et al<sup>(11)</sup> reported neither a decline nor improvement in empathy scores as medical students progressed through medical education. This is comparable with present study findings. Helena BMS et al<sup>(8)</sup> found that the differences in the empathy scores of students in the different stages of medical school were small.

Few authors<sup>(5,10)</sup> reported a progressive decline in empathy levels with years in medical college. Mitra et al<sup>(9)</sup> conducted a study in Iran to compare empathy score among medical students in both basic and clinical levels and found that the overall rate of empathy score in basic science level was more than that in clinical level. This is not comparable with present study. Mostafa et al<sup>(3)</sup> conducted a study among undergraduate medical students of Bangladesh and found that the level of empathy among undergraduate medical students gradually increases after clinical training in medical college. This is contradictory to the present study finding.

### Conclusions

The level of empathy among medical students was found to be  $99.25 \pm 13.813$ . Female students were found to be more empathetic as compared to the male students. There is no decline or increase in the mean empathy scores among various semesters.

### Limitations of the study

Due to short duration of period it was not possible to include all semesters and all students. Present study was a cross sectional study. The results cannot be generalized. A longitudinal study with a large sample size from more number of colleges would be helpful to assess the real findings.

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