Assessment of Empathy among Health Professional Students in a Government Medical College in South India

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Abstract:

Introduction: Doctor-patient relationship is highly influenced by empathy which is a vital quality among medical students. **Objective:** To assess the empathy level in the medical students and the socio-demographic factors influencing it. **Methods:** A cross-sectional study was conducted among the undergraduates of a Government Medical College in Telangana during February 2024. Total of 309 students participated in the study. Data were collected with a semi structured questionnaire and the empathy was assessed with the help of Jefferson Scale of Empathy - Student Version. Descriptive statistics were used for demographic data and Student t test and One-way ANOVA were used for comparing semesters. **Results:** The mean empathy score in the current study was 100.20 ± 15.23. Final MBBS part I students were more empathic (103.27±13.04) compared to second phase students and interns. Female students and the students who made the independent decision to pursue MBBS had significantly higher empathy scores than the others. The empathy score was not significantly associated with the choice of speciality. **Conclusion:** The mean empathy score was 100.20 (maximum score – 140) among the medical students in South India. The age, gender and the phase of the students were significantly associated with empathy. There was no relation between the empathy scores and choice of speciality.

Keywords: Empathy, Jefferson scale, Medical Students

Introduction:

The Greek word empathy has its origin from 'empatheia' meaning affection or passion with a quality of suffering.[1] Empathy is defined in the context of health professions education and patient care as "a predominantly cognitive (rather than an affective or emotional) attribute that involves understanding (rather than feeling) of the patient's experiences, concerns, and perspectives, combined with a capacity to communicate this understanding, and an intention to help".[2]

Empathy is very important component for a healthy doctor-patient relationship. The communication between doctors and patients when added with empathy builds trust among the patients.[3] In addition, empathic communication results in a bidirectional outcome. It gives an accurate diagnosis to doctors and better treatment adherence

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to patients. Learning effective communication is a vital element to improve the professionalism in medicine.[4] As a result, it improves the effectiveness of treatment and at the same time the standard of care will be improved.[5] Empathy always contributes to personal development of physicians, career fulfilment in physicians, and the best possible clinical outcomes in the patients.[2,6]

Empathy among the medical students usually varies depending on their age, gender, year of medical education, future specialty choice, burn out, quality of life, personality trait, emotional intelligence and mental health.[7,8]

Presently, empathy is accepted as a vital quality in the medical students and there is a need to assess the level of empathy at any point in their five years of medical education.[4,9] Given the varying scores of empathy globally, it is necessary to assess the empathy levels among medical students in India.[10] With this background, the current study aimed to assess the empathy level of medical students in Telangana. The secondary objective of the study was to determine, whether age, gender of the students, the phase of the students and the choice of speciality in future has any association with empathy.

Method:

A cross-sectional study was conducted in the one of the medical colleges of Telangana during the month of February 2024. The study included second phase students who recently started their clinical postings, final MBBS part I who were in the middle of the MBBS course and interns who were about to finish their course. The students of first phase who didn't start their clinical postings and the Final MBBS part II who were busy with their exams were not included in the study. All the students from three phases were included in the study. Those who were not willing to participate and didn't give consent were excluded from the study. Among the total strength of 450 undergraduates (150 from second phase, 150 from final MBBS part I and 150 interns), 309 students participated totally. Remaining 141 were either absent or not willing to participate. Institutional Ethical Committee permission (ECR/840/Inst/TG/2016/RR/20/51) was taken from the Institution before the start of the study.

Total of three lecture classes, one for each semester were chosen. Firstly, the students were briefly explained about the essence of the study and the consent was taken for the same. Then, the questionnaire was provided to the students. The questionnaire was self-administered, pretested, semi structured with two parts. Part I consists of questions related to socio demographic details, native place, current place of living, decision to join MBBS (own or forced), career satisfaction and the future career (speciality) choice. The effect of specialization on empathy was assessed by grouping the choice of subjects of students into technologically oriented (Pathology, Surgery and surgical subspecialties, Radiology, Radiation Oncology, Anaesthesiology, Preventive and Social Medicine, Otorhinolaryngology); people oriented (Internal medicine, Family medicine, Paediatrics, Neurology, Rehabilitation medicine, Psychiatry, Emergency medicine, Obstetrics and gynaecology, Ophthalmology & Dermatology) as done by Hojat et al.[2,11,12] Those who chose any other subject or were undecided were classified as others. Part II consists of Jefferson Scale of Empathy – Student version (JSE-S), designed specially to assess the empathy level among medical students.

The scale (JSE-S) used in the current study is psychometrically validated, which consists of 20 statements of which 10 were positively worded and 10 were negatively worded. The students can express their agreement level to each statement using seven-point Likert Scale.[13] This scale being wide range, allows the students for selecting from a wide range and with more discrimination. The ten positive statements were focussed on "perspective taking"

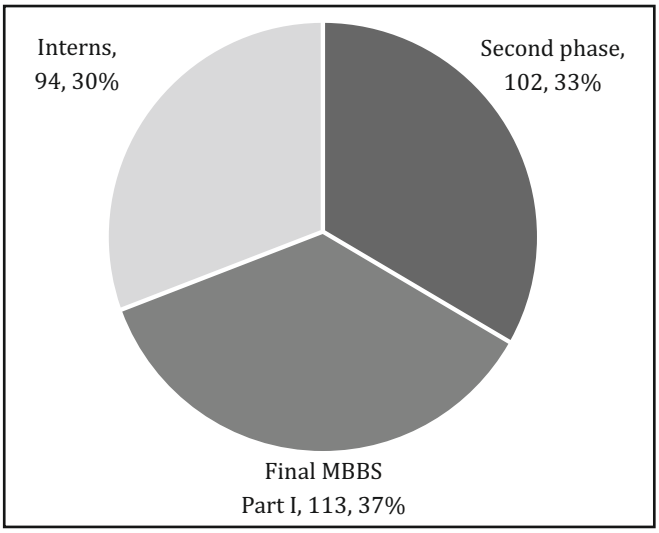
(the physician's view of a patient's perspectives) and they were scored directly (1=strongly disagree, 7=strongly agree). The remaining ten negative statements were reversely scored (1=strongly agree, 7=strongly disagree). Out of ten, eight statements were focused on "compassionate care" (understanding patient's experiences) and two statements were focused on "standing in the patient's shoes" (thinking like the patient). Thus, the total score ranges from 20 to 140. The level of empathy in the students will be directly proportional to the empathy score measured using JSE-S.[14,15] The validity and the reliability of the JSE-S scale has been well proved. The Cronbach's alpha internal consistency estimate for the 20 items was 0.76.[16,17] JSE-S scale had been widely used globally and translated in 59 local languages to assess the empathy among medical students, paramedics and practising doctors as well. The English version of the JSE-S was used for the study.

The collected data were entered in the Excel sheet and imported to SPSS. The data imported were analysed using software statistical package IBM SPSS Version 20 (Chicago, USA). Descriptive statistics were used for socio demographic details and JSE scores. Bivariate analysis with the Independent Sample t test and ANOVA were done to discover the relationship between empathy score and its determinants. Only those variables which were found to be significant were analysed by multiple linear regression model. Statistical significance for the tests of significance was set at P-value<0.05.

Results:

Total 309 students (68.66%) participated in the study out of a total 450 students. The mean age of the students was 21.69±1.35 years which ranged from 19 to 25 years. Interns participation (30.4%) were comparatively lower compared to other phases, as they had busy clinical postings on the study day (Figure 1). There was female preponderance (64.7%)

Figure 1: Distribution of study participants (N=309).



in the study population. The bulk of participants were urban natives; however, they were currently staying in hostels (Table 1).

Students in the final MBBS Part I had higher empathy scores than others. The mean scores among the different phases varied and the difference was found to be statistically significant. Female students had higher empathy scores compared to male students. Similarly, the students with urban nativity, students currently living in homes along with parents and the students who made the independent decision to pursue MBBS were found with significantly higher empathy scores (Table 1).

The mean±SD empathy score of the study participants was 100.20±15.23. Minimum score recorded was 53 and the maximum score ranged till 134. Line graph showing mean empathy score of the study participants according to their phases (Figure 2).

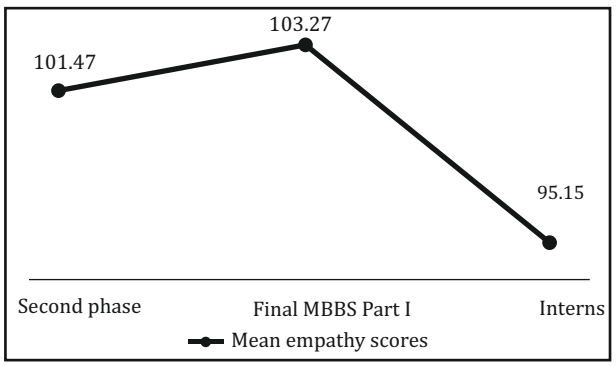
Linear regression multivariate model was run to predict the effect of different phases, age, gender, nativity, current residence and decision to join MBBS on the empathy scores. Considering the collinearity statistics, variance inflation factor value of all the

Table 1: Distribution of the study participants according to their baseline characteristics and empathy scores (N=309)

Variable		Frequency (%)	Empathy score (Mean ± SD)	P value
Age (in years)	≤22	218 (70.6%)	103.17±14.33	<0.001*
	>22	91 (29.4%)	93.11±15.03	
Phases*	Second phase	102 (33%)	101.47±17.1	<0.001*
	Final MBBS Part I	113 (36.6%)	103.27±13.0	
	Interns	94 (30.4%)	95.15±14.4	
Gender#	Male	109 (35.3%)	94.92±15.0	<0.001*
	Female	200 (64.7%)	103.09±14.6	
Native place#	Urban	224 (72.5%)	101.59±14.9	0.009*
	Rural	85 (27.5%)	96.55±15.5	
Current residence ‡#	Home	81 (26.2%)	105.01±13.7	0.001*
	Hostel	228 (73.8%)	98.50±15.4	
Decision to join MBBS*	Own	270 (87.4%)	101.33±14.9	0.002*
	Parents	31 (10%)	92.84±16.6	
	Others	8 (2.6%)	90.63±8.7	
Having career satisfaction#	Yes	245 (79.3%)	100.30±14.8	0.825
	No	64 (20.7%)	99.83±16.8	
Future career choice*	People oriented	142 (46%)	99.51±14.7	0.738
	Technology oriented	108 (35%)	101.01±15.5	
	Others	59 (19.1)	100.41±15.5	

*P value ⩽0.05 is considered significant. *Anova, #Independent t-test

Figure 2: The mean empathy score of study participants (N=309)



independent variables were well below 3. Durbin Watson value of 1.78 indicated independence of observations. No pattern found in the histogram ensured homoscedasticity, while cook's distance range of 0.00-0.46 (mean=0.003) nullifies the chance of an influencing outlier. Age, Gender, current residence and decision to join MBBS were significant predictors of empathy score adjusted with each other (Table 2).

Table 2: Multiple linear regression analysis showing predictors of empathy of the study participants (N=309)

Variables	Unstandardized coefficients		T value	P value	95% CI for B	
	B	SE			Lower bound	Upper bound
Age (>22)	-2.921	0.927	-3.149	0.002*	-4.74	-1.09
Phases (second phase)	0.359	2.64	0.13	0.89	-4.83	5.55
Gender (female)	5.87	1.74	3.37	0.001*	2.44	9.29
Native place (rural)	-3.56	1.90	-1.87	0.062	-7.30	0.17
Currently living in (hostel)	-4.55	1.90	-2.39	0.017*	-8.30	-0.81
Decision to join MBBS (parents)	-5.15	2.49	-2.07	0.039*	-10.05	-0.25

*P value ⩽ 0.05 is considered significant. B-Unstandardized Beta, SE-Standard Error, CI-Confidence Interval

Discussion:

Female students were more empathic than male students and the result was also significantly associated in this study. This finding was consistent with many other studies.[3,10,17,18] The gender difference with the increase in empathic score in females can be explained due to the built in factors (e.g., biological characteristics peculiar to each gender) as well as exogenous factors (e.g., differences in caring, socialization, and gender role expectations).[19]

The mean score of empathy in this study was 100.20 which is similar to the studies by Chatterjee et al[17] (96.01), Mirani et al[18] (98.11) and GC Krishna Behadur et al[19] (97.28). But the score was lower when compared to the study conducted in USA by Hojat et al[9] and in some western countries.[21] Approximately, an 18-year-old adolescent after completing the school education enters directly into the medical college and spends the five and half years towards under graduation. In the meantime, these school students usually found no time for extracurricular activities or for the development of the skills required for "professionalism" as they were busy reading for entering into medical college. This could be considered as one of the reasons for the reduced baseline scores in India compared to the Western countries. Even the curriculum in medical colleges in India is different when compared to the developed countries like Japan, US and Mexico where the students were exposed to subjects such as literature, other sciences, economy and philosophy.[10]

While comparing the phases in the current study, the students in the final MBBS Part I were more empathic than the second phase students and the interns. The decreased empathic score among the second phase students was consistent with the study done by Chatterjee et al,[17] but with the time, with the increase in the phases, the empathic score increased similar to the current study. Both studies being cross sectional studies, the temporal inferences drawn cannot be taken into consideration and further studies are recommended to dive in and explore the possible causes. The increase in empathic score in the final MBBS Part I could be attributed to the positive effects of Community Medicine and AETCOM too. But again, the score decreased with increase in college days. This finding was similar to other studies,[18,22] where the empathy was declining with increasing semesters. The factors that could explain the declining empathy score with increasing semesters could be the academic stress in final years, duties responsibilities during internship, long shifts, no proper sleep and no quality family time.

In the current study, people coming from urban native had higher empathy scores than rural people. This was in contrast to the study by Biswas et al[3] where people having origin from rural native were empathic compared to urban people. Over-representation of the urban students in the current study might be one of the reasons for this empathic score difference. This could have resulted in the higher empathic scores among the students with urban nativity.

The students living in the homes along with the family members were more empathic than the students living in the hostel. Similar finding was found in the Kolkata study.[3] The explanation could be, the moral and the psychological support received by the students from the family members could have helped to reduce their stress on academics, which in turn reflected on giving better patient care. Students who were satisfied with the career were more empathic than the students who were not satisfied with the career. It was convincing that the dissatisfied students with the career would experience anything from frustration to distress. Due to this they might have scored less on empathy scale.

In the current study, there was no statistically significant difference (P=0.738) in the empathy score among the students choosing different specialities in future. In the current study, students who wanted to pursue technology-oriented specialities were empathy than others. This finding is contrast to the studies,[3,17] where students chosen people-oriented speciality were empathic. The possible explanation could be the academic stress in the students who wish to choose people-oriented specialities as they were the top branches in India. However, the change in medical students' knowledge and perspectives about specialities, may influence their choice in the future. So, evaluating the empathy based on the choice of specialties in future could be a bias.

Strengths and Limitations:

The current study was one of the few studies conducted in India to evaluate the medical students' empathy and the factors influencing them. Some of the limitations of this study are as follows: Firstly, though the response rate in the study is fairly high, the students who didn't participate would have been significantly different from the students who Participated. Secondly, the first phase students and the final MBBS part II students were not involved in the study. Thirdly, the medical students' social desirability could lead them to over-report empathic scores. Lastly, other important determinants of empathy like psychological morbidities of the students were not considered in the study.

Conclusion:

Empathy being a vital component of doctor-patient relationship was quite low (mean 100.20±15.23) in the current study. Age, gender of students, current residence and decision to join MBBS were some of the vital determinants influencing empathy. The result suggests that choice of speciality doesn't influence the empathic levels in the students. Longitudinal studies with larger sample size incorporating more medical colleges could provide better insights to see how the empathy evolves over the phases of students. In addition, the medical education system should focus on encouraging humanity and the empathy among the medical college students. By this way, patient care can be even more improved in the near future.

Declaration:

Funding: Nil

Conflicts of interest: Nil

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