

Medical Education

Humanitarian approach in medicine: A study on clinical empathy among medical students and graduates using the Jefferson Scale of Empathy

VEDINEERAJ, PUJA DULLOO, DEEPAK SHARMA, PRAVEEN SINGH

ABSTRACT

Background. Empathy is one of the pillars of professionalism in the medical field associated with better patient satisfaction and outcome. This study aimed to assess and compare the empathy score with other institutes within and outside India using the Jefferson Scale of Empathy-Student version (JSE-S).

Methods. We did a cross-sectional study for undergraduate medical students and interns of Pramukhswami Medical College, Karamsad, for 4 months from October 2019. Voluntary participants completed the JSE-S, an internationally validated 20-item survey questionnaire.

Results. The mean empathy score of 575 voluntary participants out of 631 was 100.75, with women having higher and significant scores than men (F 102.1 [11.5]; M 98.3 [12.5]; $p < 0.001$). The highest empathy score was observed in the first year (102 [10.8]), which increased and decreased in different years of medical education with a maximum dip in the second year (99.4 [11.5]). The choice of specialty of participants showed a lower significant difference as per the JSE-S score. A lower empathy score was identified among participants compared to medical students studying in international medical institutes.

Conclusion. There is a need to organize workshops with training modules to cater to the empathy aspect of professional care, as a continuous process, starting from the first year till the completion of internship.

Natl Med J India 2022;35:100–4

INTRODUCTION

Empathy, one of the pillars of professionalism, is a complex competence that includes both affective and cognitive components.¹ In healthcare professionals, empathy has been defined as an intellectual quality that empowers individuals to understand the experience and perspective of the patient and develops the skill of communicating it as well.^{2–4} Empathy promotes patient and physician satisfaction, improves the

physician's diagnostic ability and decreases the rate of miscommunication and lawsuits and may even improve patient outcomes.^{5–13}

Various instruments for measuring empathy used earlier were the Interpersonal Reactivity Index,¹⁴ the Empathy Scale¹⁵ and the Emotional Empathy Scale,¹⁶ which were not specific for the health professionals but the general population.¹⁷ The Jefferson Scale of Empathy (JSE), developed by Hojat *et al.*, is a 20-item instrument with content specificity and relevance to measure empathy in the context of education of health professionals patient care of practitioners.^{2,3} The items are answered on a 7-point Likert-type scale (1=strongly disagree, 7=strongly agree). Ten items are positively worded and directly scored, and the other ten are negatively worded (reverse scored). Three versions of the JSE are available, which are administered to medical students (S-version), practising health professionals (HP-version) and to all health profession's students other than medical students (HPS-version).^{2,18}

Various studies have explored the association between clinical empathy and progressive years of medical training and gender other than the choice of specialty, outside^{18–27} as well as within the Indian subcontinent.^{21,28–32}

We aimed to assess clinical empathy and the various associated factors in a cohort of medical students across four-and-a-half years of the undergraduate and internship programmes.

METHODS

Ethical approval

The study was commenced after approval from the Institutional Ethical Committee, Pramukhswami Medical College (PSMC), Bhalka University (BU), Karamsad, Gujarat.

Study design

We conducted a cross-sectional study to assess the empathy of undergraduate medical students and the interns at PSMC, BU, Karamsad, using the JSE-S score, after acquiring copyright permission from the Jefferson Scale of Empathy-Student version. All the interns and undergraduate medical students were included in the study. The study was conducted from October 2019 to February 2020 for 631 undergraduate medical students and interns who were enrolled for the academic year 2019–20.

The participant's information sheet was explained and given to the undergraduate students (first, second, third, fourth and final year of medical programme) of PSMC and the interns. Volunteer undergraduates and interns were enrolled in the study. Those not willing to participate in the study after reading the participant information sheet were excluded. Incompletely filled forms were also excluded from the study. Every participant

Pramukhswami Medical College, Bhalka University, Karamsad, Anand 388325, Gujarat, India

VEDI NEERAJ, PRAVEEN SINGH Department of Anatomy
PUJA DULLOO Department of Physiology
DEEPAK SHARMA Department of Community Medicine

Correspondence to PUJA DULLOO; pujad@charutarhealth.org

[To cite: VEDI N, DULLOO P, SHARMA D, SINGH P. Humanitarian approach in medicine: A study on clinical empathy among medical students and graduates using the Jefferson Scale of Empathy. *Natl Med J India* 2022;35:100–4.]

signed a written consent form before filling the questionnaire.

The principal investigator of the study acquired permission from the respective head of the department to allocate specific time to conduct the research study within the institute. Participants took 15–20 minutes to complete the JSE-S score sheet. Anonymity was maintained.

The literature was searched for other studies using the JSE-S score for medical students in India and globally to identify differences or similarity with our findings.

Statistical analysis

The data were analysed via Excel and online free statistical software, using descriptive statistics for mean and standard deviation with skewness and kurtosis statistics, Spearman correlation and Kruskal–Wallis test and Mann–Whitney U test ($p < 0.05$ was considered as significant).

RESULTS

Of 631 undergraduate medical students and interns who were approached, 602 consented to participate. The hard copy of the JES-S questionnaire was given to them. Twenty-seven partially filled questionnaires were excluded from the study (overall response rate 91.1%).

Table I shows a decrease in the JSE-S empathy scores with advancing age and a higher score in women compared to men. There was a decrease in score in the second year of the medical course but increased progressively subsequently and was maximum during the internship. Less variability was observed for the JSE-S empathy score as per the specialty chosen by the participant.

The median score was 102.25 and 5% of the students scored below 78.2. Also, 5% of the students scored above 119.35.

Spearman rho correlation for 575 participants showed a significantly high level of positive correlation for age and year of MBBS (0.71; two-tailed $p < 0.0001$), while a low level of correlation was observed between age (0.086; two-tailed $p < 0.04$) and gender with mean empathy score (0.157; two-tailed $p < 0.0001$).

Cronbach alpha reliability statistics value was more than 0.70 for 20 questions of the JES-S empathy score (0.743).

Table II shows statistical significance for the JSE-S empathy score as per gender ($p < 0.0001$). No statistical significance was observed between the JSE-S empathy score and other independent variables such as age, year of MBBS and specialty chosen, although variation was observed within the variables for mean ranks. First-year students showed more mean rank value than other groups.

Table III shows statistical significance for JSE-S empathy score as per gender for participants from third year and those who had chosen surgery as a specialty and for those who did not decide the specialty to be chosen, while no statistical significance was observed as per other chosen specialties or year of the medical course.

DISCUSSION

We aimed to assess clinical empathy using the JSE-S score in medical students and interns and to identify the relation between the scores acquired as per age, gender, year of medical course and specialty to be chosen by the participants in the near future.

TABLE II. The association of Jefferson Scale of Empathy-Student (JSE-S) scores with different independent variables

Variable	Category (n)	JSE-S mean rank	p value
Age (years)	<22 (433)	291.70	0.259
	22–24 (139)	279.50	
	25–27 (3)	148.33	
Gender	Men (248)	258.09	0.001*
	Women (327)	310.69	
MBBS year	First year (144)	308.51	0.404
	Second year (84)	271.02	
	Third year (107)	293.93	
	Fourth year (100)	282.89	
	Intern (140)	276.21	
Specialty chosen	Medicine (194)	287.32	0.841
	Surgery (270)	288.85	
	Other (4)	213.25	
	Undecided (107)	289.87	

*statistically significant

TABLE I. Descriptive statistics of Jefferson Scale of Empathy-Student (JSE-S) version score by different independent variables

Variable	Category (n=575)	JSE-S score			
		Range	Median	Mean (SD)	
Age (years)	<22 (433)	63–125	102	100.7 (12.03)	
	22–24 (139)	75–131	100	100.0 (12.3)	
	25–27 (3)	82–96	96	91.3 (8.1)	
Gender	Men (248)	63–131	99	98.3 (12.5)	
	Women (327)	70–127	103	102.1 (11.5)	
Year of MBBS	First year (144)	79–125	103	102.1 (10.8)	
	Second year (84)	76–122	100	99.4 (11.5)	
	Third year (107)	63–124	102	100.4 (13.5)	
	Final year (100)	70–125	102	100.1 (12.4)	
	Intern (140)	70–131	100	99.7 (12.3)	
Specialty chosen	Medicine (194)	63–131	101.5	100.5 (12.0)	
	Surgery (270)	67–127	102	100.5 (12.0)	
	Other (4)	70–111	96	93.3 (17.1)	
	Undecided (107)	72–125	102	100.5 (12.4)	
Different percentiles in JSE-S score for the study population				5th	78.2
				25th	92.3
				50th	102.3
				75th	110.3

TABLE III. Mann–Whitney U variability significance for the year of medical students and specialty chosen for gender

Independent variable and category	Gender	n	JSE-S mean rank	Sum of ranks	JSE-S score by Mann–Whitney U	Z (two-tailed significance)
<i>Year of medical programme (n)</i>						
First year (n=144)	Men	69	65.83	4542.00	2127.0	-1.842 (0.065)
	Women	75	78.64	5898.00		
Second year (n=84)	Men	36	40.17	1446.00	780.0	-0.759 (0.448)
	Women	48	44.25	2124.00		
Third year (n=107)	Men	45	41.87	1884.00	849.0	-3.446 (0.001*)
	Women	62	62.81	3894.00		
Fourth year (n=100)	Men	44	46.00	2024.00	1034.0	-1.375 (0.169)
	Women	56	54.04	3026.00		
Intern (n=140)	Men	54	66.50	3591.00	2106.0	-0.925 (0.355)
	Women	86	73.01	6279.00		
<i>Specialty chosen (n)</i>						
Medicine and allied branch (n=194)	Men	77	90.05	6933.50	3930.5	-1.50 (0.134)
	Women	117	102.41	11981.50		
Surgery and allied branch (n=270)	Men	129	123.53	15935.00	7550.0	-2.41 (0.016*)
	Women	141	146.45	20650.00		
Other (n=4)	Men	3	2.00	6.00	0.000	-1.34 (0.18)
	Women	1	4.00	4.00		
Undecided (n=107)	Men	39	45.13	1760.00	980.0	-2.24 (0.025*)
	Women	68	59.09	4018.00		

*statistically significant JSE-S Jefferson Scale of Empathy-Student version

Empathy

The mean empathy score of the undergraduate medical students and interns was 100.75, the values were close to Nair *et al.* from Udupi, Karnataka (101.04),²⁷ although it was much lower than that reported by Chen *et al.* from the USA (114.3),²⁰ Mostafa *et al.* from Bangladesh (110.41)¹⁷ and Kataoka *et al.* from Japan (104.30).²¹ The score was lower than those from other states of India, as reported by Shashikumar *et al.* from Pune (102.91),²⁸ and Murthy *et al.* from Vijayawada (103.29),²⁵ although it was higher than Kulkarni *et al.* from Nagpur (99.25)²⁴ and Chatterjee *et al.* from New Delhi (96.01).²⁶ Our institute, being a nodal centre for medical education and technology (MET), found it necessary to identify the basal empathy score of the undergraduate students and attempt to raise it for better patient care.

The empathy score at the entry level of medical school in our study was lower (102.1; Table I) than that reported from the USA by Chen *et al.* (115.5)²⁰ and Hojat *et al.* (114.5)³ and even from different states of India—Shashikumar *et al.* from Pune (107.85)²⁸ and Nair *et al.* from Karnataka (105).²⁷ Similar results were reported from Vijayawada by Murthy *et al.* (102.52),²⁵ while a lower value was reported by Kulkarni *et al.* from Nagpur (96.05).²⁴

Clinical empathy and gender

In our study, the clinical empathy score was higher in women (102.1 [11.5]) compared to men (98.3 [12.5], $p < 0.0001$, Table II). The results are similar to those observed by Chen *et al.*²⁰ from the USA where women medical students had higher empathy than men medical students (116.5 v. 112.1, $p < 0.001$). Similarly, Kataoka *et al.*²¹ from Japan showed that women had higher scores than men (mean scores were 107 and 103.7, respectively). Indian studies such as those by Shashikumar *et al.*²⁸ showed similar results with significantly higher empathy levels in women compared to men ($p < 0.01$). Chatterjee *et al.*²⁶ from New Delhi also found a significantly higher level of empathy scores in women ($p < 0.001$). Similar results were observed by Kulkarni *et*

*al.*²⁴ from Nagpur with women showing a significantly higher empathy score ($p < 0.05$).

Hojat *et al.*^{14,29} in a longitudinal study found that the mean empathy scores in men and women changed equally over the years, women showed consistently higher scores than men, even when the mean scores dipped in general, and that the difference remained significant. Hasan *et al.*¹⁸ studied medical students in Kuwait and found a statistically significant difference in empathy scores of men and women ($p < 0.003$). Other researchers globally have found similar findings.^{23,30}

The majority of Indian studies have shown better empathy scores in women medical students compared to men medical students probably due to the traditional cultural role of the woman as a caregiver. Although Baez *et al.*³¹ found that a tool based on self-reporting to identify empathy scores may induce biases leading the participating individual to assume traditional gender-based stereotypes. In contrast, a review by Christov-Moore *et al.* found that higher empathy in women has not only social but also phylogenetic and ontogenetic roots.³²

The study by Rahimi-Madiseh *et al.* in Iranian students showed higher empathy scores in women than men, but the difference was not significant (105.6 v. 103.7).²² Mestre *et al.* found that women adolescents have a more empathic disposition, i.e. the main driver of pro-social behaviour, than men adolescents.³³

Clinical empathy and number of years of study

In our study, the mean empathy scores were highest in the first year (102.1 [10.8]), which decreased in the second year (99.4 [11.5]), and increased in the third and fourth year (100.4 and 100.5) of medical education. However, the score decreased again at the time of the internship (99.7 [11.5]). Similar results were observed by a few researchers in India,^{24,27} and researchers from other countries.^{17,22}

The National Medical Commission introduced competency-based medical curriculum (CBME) from the year 2019, for first-

year students. As per this curriculum, few sessions related to empathy and ethics had been introduced during the foundation course. This might be one of the reasons behind the high score among first-year students.

Although other researchers in India^{26,28} and other countries showed a sequential increase in empathy as the students progressed in their course,^{18,20,21} a study by Murthy *et al.* did not show any significant change.²⁵

Our study showed a statistical significance only in the third year as per gender ($p < 0.001$, Table III). This probably indicates the positive effects of the teaching of community medicine along with the rotational community posting.

Researchers have found that the doctors of family medicine (loosely an off-shoot of community medicine) are more empathetic than others.³⁴ The decline in empathy score, in our study, as the course progressed could be attributed to the traditional curriculum with less scope for the development of skills related to the affective domain.^{35,36} Moreover, there is limited scope of students being assessed in terms of the affective domain either at the level of an undergraduate course or postgraduate selection test in India.³⁷

With the present revised curriculum based on CBME, competency-based approach might lead to better empathy with students having a specific focus on early clinical exposure and attitude, ethics and communication skill being part of the first year of medical course.³⁸ Some researchers have attempted to explain the variability in empathy levels by a curriculum that relies on a problem-based approach to addressing a patient's complaint than by more humanistic interaction.³⁹

Clinical empathy across different settings

Our study shows an almost similar score for empathy as per the specialty they would plan/like to choose in the near future compared to those who had not decided the specialty. Although lesser empathy was observed for those who chose a specialty other than surgery or medicine (Table II), statistical significance was observed only for those who chose a surgical specialty and those undecided as per gender ($p < 0.05$, Table III).

Some Indian studies did not show a difference concerning the preference for desired specialty, highlighting that 'Indian medical schools come under the vigilance of a regulatory body, there is no scope for offering electives, humanities or otherwise, and we were, therefore, unable to study this effect'.²⁷ With the revised competency-based curriculum, it would be interesting to see if any difference occurs.

This was a cross-sectional study; thus, we could not capture the actual progression of empathy among undergraduate medical students. Moreover, this represents the response from a single private medical institute of India. The social environment may have led students to under- or over-report empathy.

Limitations

All the students from each year of undergraduate medical programme were included in the study irrespective of their category of admission selection, socioeconomic or cultural background. Variability in admission to the course could be one of the factors affecting the score range. It would be good to know the progress of the students, for estimating the empathy level during their journey within the medical institute.

Conclusion

William Osler said: 'The good physician treats the disease; the

great physician treats the patient who has the disease.'

As per our study, there is a wide disparity in the JSE-S score among both genders between states, and globally. This indicates a strong need to reflect on our curriculum and evaluate its progression. As a caregiver, it should be a mandate that medical students from their entry be taught professional values for being a good physician, specifically focusing on communication skills with the patient, other healthcare professionals and colleagues. Only a longitudinal study can determine the empathy-inducing effectiveness of CBME curriculum for undergraduate medical students.

ACKNOWLEDGEMENTS

We thank the undergraduate medical students and interns of PSMC for participating and providing transparent feedback for the study. Our sincere thanks to all the departmental heads of the institute to provide us the time to interact with the students and interns.

Conflicts of interest. None declared

REFERENCES

- 1 Seeberger A, Lönn A, Hult H, Weurlander M, Wernerson A. Can empathy be preserved in medical education? *Int J Med Educ* 2020;**11**:83–9.
- 2 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.
- 3 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.
- 4 Hojat M, Gonnella JS, Mangione S, Nasca TJ, Magee M. Physician empathy in medical education and practice: Experience with the Jefferson Scale of Physician Empathy. *Semin Integr Med* 2003;**1**:25–41.
- 5 Coulehan JL, Platt FW, Egner B, Frankel R, Lin CT, Lown B, *et al.* 'Let me see if I have this right...': Words that help build empathy. *Ann Intern Med* 2001;**135**: 221–7.
- 6 Kim SS, Kaplowitz S, Johnston MV. The effects of physician empathy on patient satisfaction and compliance. *Eval Health Prof* 2004;**27**:237–51.
- 7 MacPherson H, Mercer SW, Scullion T, Thomas KJ. Empathy, enablement, and outcome: An exploratory study on acupuncture patients' perceptions. *J Altern Complement Med* 2003;**9**:869–76.
- 8 Vermeire E, Hearnshaw H, Van Royen P, Denekens J. Patient adherence to treatment: Three decades of research. A comprehensive review. *J Clin Pharm Ther* 2001;**26**:331–42.
- 9 Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician–patient communication. The relationship with malpractice claims among primary care physicians and surgeons. *JAMA* 1997;**277**:553–9.
- 10 Davis MH. Measuring individual differences in empathy: Evidence for a multidimensional approach. *J Pers Soc Psychol* 1983;**44**:113–26.
- 11 Hogan R. Development of an empathy scale. *J Consult Clin Psychol* 1969;**33**: 307–16.
- 12 Mehrabian A, Epstein N. A measure of emotional empathy. *J Pers* 1972;**40**: 525–43.
- 13 Evans BJ, Stanley RO, Burrows GD. Measuring medical students' empathy skills. *Br J Med Psychol* 1993;**66** (Pt 2):121–33.
- 14 Hojat M, Gonnella JS, Nasca TJ, Mangione S, Veloksi JJ, Magee M. The Jefferson Scale of Physician Empathy: Further psychometric data and differences by gender and specialty at item level. *Acad Med* 2002;**77**:S58–S60.
- 15 Calabrese LH, Bianco JA, Mann D, Massello D, Hojat M. Correlates and changes in empathy and attitudes toward inter-professional collaboration in osteopathic medical students. *J Am Osteopath Assoc* 2013;**113**:898–907.
- 16 Hojat M, Zuckerman M, Gonnella JS, Mangione S, Nasca T, Vergare M, *et al.* Empathy in medical students as related to specialty interest, personality, and perception of mother and father. *Pers Individ Dif* 2005;**39**:1205–15.
- 17 Mostafa A, Hoque R, Mostafa M, Rana MM, Mostafa F. Empathy in undergraduate medical students of Bangladesh: Psychometric analysis and differences by gender, academic year, and specialty preferences. *ISRN Psychiatry* 2014;**2014**:375439.
- 18 Hasan S, Al-Sharqawi N, Dashti F, Abdul Aziz M, Abdullah A, Shukkur M, *et al.* Level of empathy among medical students in Kuwait University, Kuwait. *Med Princ Pract* 2013;**22**:385–9.
- 19 Chen DC, Kirshenbaum DS, Yan J, Kirshenbaum E, Aseltine RH. Characterizing changes in student empathy throughout medical school. *Med Teach* 2012;**34**: 305–11.
- 20 Chen D, Lew R, Hershman W, Orlander J. A cross-sectional measurement of medical student empathy. *J Gen Intern Med* 2007;**22**:1434–8.
- 21 Kataoka HU, Koide N, Ochi K, Hojat M, Gonnella JS. Measurement of empathy

- among Japanese medical students: Psychometrics and score differences by gender and level of medical education. *Acad Med* 2009;**84**:1192–7.
- 22 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**:e471–8.
- 23 Duarte MI, Raposo ML, Rodrigues PJ, Branco MC. Measuring empathy in medical students, gender differences and level of medical education: An identification of a taxonomy of students. *Inv Ed Med* 2016;**5**:253–60.
- 24 Kulkarni MV, Pathak S. Assessment of empathy among undergraduate medical students. *J Educ Technol Health Sci* 2016;**3**:23–7.
- 25 Murthy PS, Madhavi K, Reddy GH, Chaudhury S. Empathy in Indian medical students: Influence of gender and level of medical education on empathy score. *Univers Res J Med Sci* 2014;**1**:17–21.
- 26 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.
- 27 Nair S, Shetty RS, Guha S, Anjum Z, Kamath A. Assessing empathy among undergraduate medical students: A cross sectional analysis using the Jefferson Scale in a medical school in coastal Karnataka. *Int J Community Med Public Health* 2018;**5**:953–6.
- 28 Shashikumar R, Chaudhary R, Ryali 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.
- 29 Hojat M, Gonnella JS, Mangione S, Nasca TJ, Veloski JJ, Erdmann JB, et al. Empathy in medical students as related to academic performance, clinical competence and gender. *Med Educ* 2002;**36**:522–7.
- 30 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.
- 31 Baez S, Flichtentrei D, Prats M, Mastandueno R, Garcia AM, Cetkovich M, et al. Men, women...who cares? A population-based study on sex differences and gender roles in empathy and moral cognition. *PLoS One* 2017;**12**:e0179336.
- 32 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** (Pt 4):604–27.
- 33 Mestre MV, Samper P, Frías MD, Tur AM. Are women more empathetic than men? A longitudinal study in adolescence. *Span J Psychol* 2009;**12**:76–83.
- 34 Yu FS, Yip BH, Kung K, Fung CS, Wong CK, Lam AT, et al. The association of types of training and practice settings with doctors' empathy and patient enablement among patients with chronic illness in Hong Kong. *PLoS One* 2015;**10**:e0144492.
- 35 Imran N, Awais Aftab M, Haider II, Farhat A. Educating tomorrow's doctors: A cross sectional survey of emotional intelligence and empathy in medical students of Lahore. *Pak J Med Sci* 2013;**29**:710–14.
- 36 Tavakol S, Dennick R, Tavakol M. Psychometric properties and confirmatory factor analysis of the Jefferson Scale of Physician Empathy. *BMC Med Educ* 2011;**11**:54.
- 37 Singh T, Modi JN, Kumar V, Dhaliwal U, Gupta P, Sood R. Admission to undergraduate and postgraduate medical courses: Looking beyond single entrance examinations. *Indian Pediatr* 2017;**54**:231–8.
- 38 Medical Council of India. Competency based undergraduate curriculum for the Indian Medical Graduate. Available at www.mciindia.org/CMS/wp-content/uploads/2020/01/UG-Curriculum-Vol-1.pdf (accessed on 12 Jun 2020).
- 39 Evans BJ, Stanley R, Burrows D. Measuring medical students' empathy skills. *Br J Med Psychol* 1993;**66**:121–31.

5-year subscription rates

5-year subscription rates for *The National Medical Journal of India* are now available. By subscribing for a duration of 5 years you save almost 14% on the annual rate and also insulate yourself from any upward revision of future subscription rates. The 5-year subscription rate is:

INDIAN SUBSCRIBERS: ₹3600 for institutions
₹1800 for individuals

OVERSEAS SUBSCRIBERS: US\$ 450 for institutions
US\$ 225 for individuals

Send your subscription orders by cheque/demand draft payable to *The National Medical Journal of India*. If you wish to receive the *Journal* by registered post, please add **₹90 per annum** to the total payment and make the request at the time of subscribing.

Please send your payments to:

The Subscription Department
The National Medical Journal of India
All India Institute of Medical Sciences
Ansari Nagar
New Delhi 110029