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RESEARCH ARTICLE

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Empathy levels among undergraduate students of health sciences

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ABSTRACT

Aims: To determine empathy levels of medical students of Rawal Institute of Health Sciences using the Jefferson scale of physician empathy and to establish the relationship between empathy scores and year of study and gender.

Method: A cross-sectional study was conducted from April 2022 to July 2022, at Rawal Institute of Health Sciences. Jefferson scale of empathy health profession students' version was distributed among 230 students of all 5 years of MBBS.

Results: The results showed that 67.8% (n = 156/230) had a good empathy score, 20.9% (n = 48/230) had an excellent score, and 11.3% (n = 26/230) had an average quality empathy score. The relationship between year of study and empathy score was significant (p = 0.003) with 3rd year students having excellent empathy scores as compared to the rest of the years and 5th year having more students with average empathy as compared to the rest of the years. The relationship between gender and empathy scores was not significant (p = 0.302).

Conclusion: Professional empathy among medical students is associated with increased satisfaction with their education, lower levels of stress and burnout, and higher ratings of overall clinical competence. Private medical students have good scores of empathy.

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Emotional intelligence; ethics; education; medical students

Introduction

In medicine, empathy is best defined as a cognitive characteristic that revolves around a physician's ability to feel what the patient feels; his pain, sorrow, and perception, along with his ability to converse this sympathy and explain that he tends to provide best care [1]. Empathy is one of the most exalted sentiments and so is the reason for it being studied in depth. Its importance lies in its beneficial outcomes like improvement in clinical practices, patient satisfaction, adherence to treatment, and patient-centeredness in undergraduate medical students. Not only does this have a positive influence on patients but it also prevents extreme emotional stress among medical students and healthcare professionals [2]. It has also been scientifically proven that empathetic doctors have less chance of burnout [3]. Despite its significance, empathy is still one of the most difficult schools of thought that can be taught [4] as it varies from person to person and even between different regions. For example, a mean empathy score of 115 was reported for American medical students, 109.6 for Chinese, 107.8 for Indian medical students, and 110.4 for Bangladeshi students, which was found to be higher than Japanese 104, Iranian 105.1, and Kuwaiti students 104.9, whereas mean level for Pakistani medical undergraduates was seen to be 90.63 only; which is quite an alarming situation [5]. Other than the relevance of empathy levels with different regions, it is also associated with gender, religion, and year of medical education, etc. [6]. According to recent trends, it is observed that females tend to be more empathic than males and empathy levels are significantly higher among medical undergraduates of younger years, especially those medical students who are studying in

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private medical colleges [4,5,7]. At present, the bulk of the literature related to empathy levels in medical students is confined to the Western population [8]. Because of its significance and scarce information, especially in Pakistan, we set out to determine the empathy levels of medical students of Rawal Institute of Health Sciences using the Jefferson scale of physician empathy and its association with different variables.

Materials and Methods

It was a quantitative, descriptive, cross-sectional study conducted from April 2022 to July 2022, at Rawal Institute of Health Sciences Islamabad, Pakistan. After approval from the Rawalpindi Medical University Ethical Board, the sample size was calculated at a 95% confidence level and 5% confidence interval using the OpenEpi software [9] $n = 230$.

$$\text{Sample size } n = \frac{[\text{DEFF}^*\text{Np}(1\text{-}p)]}{[(d^2/Z^2_{1\text{-}\alpha/2})^*(N\text{-}1) + p^*(1\text{-}p)]}$$

Using a probabilistic systematic random sampling technique, 46 students from each of the 5 years of MBBS were selected. Informed consent was obtained, and all measures to protect the confidentiality of the study information were implemented. Anonymity was maintained. Students were assured of the confidentiality of their data, and the survey instrument was destroyed after data were entered into computer files. The study was given an exempt status by the Rawalpindi Medical University Institutional Review Board

Jefferson scale of empathy health profession students' version (JSPE-HPS)

Scoring: the JSE-HPS instrument contained 20 items with response options based on a 7-point Likert scale (strongly agree = 7, strongly disagree = 1) and could be completed in less than 5 minutes. The 10 negatively worded items in the scale were reverse scored (strongly agree = 1, strongly disagree = 7). The total score is 140 and the minimum is 20. A higher score indicated a behavioral tendency favoring empathic engagement in patient care. Questions also were solicited about the student's gender and age. Scores between 20 and 50 were considered poor, between 51 and 80 average, 81 to 110 good, and above 110 excellent empathy score.

JSPE was developed by researchers at Thomas Jefferson University, Philadelphia, USA, and it was concluded in the pioneer study that "psychometric findings provided support for construct validity, criterion-related validity (convergent and discriminant), and internal consistency reliability (coefficient alpha) of the scale" [10]. The psychometric properties of the scale were further confirmed in a meta-centric study by the researchers who concluded that "our empathy scale is a reliable and valid instrument for studying physician empathy" [11]. The JSPE has been translated into 56 languages and permission to use has been granted in 74 countries [12]. Thomas Jefferson University also provides online administration and scoring services [12]. Studies have confirmed its psychometric properties as well as reliability and validity in addition to internal consistency reliability with Cronbach's alpha coefficient values of >0.80 [13,14].

Data were analyzed using IBM Statistics SPSS V28. The Chi square test was employed. Frequencies and percentages for categorical variables were calculated. $p < 0.05$ was considered statistically significant.

Results

Of the 230 respondents, 76.5% (n = 176/230) were females and 23.5% (n = 54/230) were males. 25.2% (n = 58/230) were from 1st year, 13.5% (n = 31/230) from 2nd year, 31.7% (n = 73/230) from 3rd year, 1.3% (n = 3/230) from 4th year, and 28.3% (n = 65/230) from 5th year (Table 1)

After calculating the overall score, 67.8% (n = 156/230) had a good empathy score, 20.9% (n = 48/230) had an excellent score, and 11.3% (n = 26/230) had an average quality empathy score (Fig. 1). The relation between year of study and empathy score was significant with 3rd year students having excellent empathy scores as compared to the rest of the years and 5th year having more students with average empathy as compared to the rest of the years. The relationship between gender and empathy scores is not significant (Fig. 2).

When asked whether empathy is a therapeutic skill without which a doctor's success is limited, 35.7% strongly agreed to it, 50.4% agreed, 9.6% somewhat agreed, 1.3% stated that there is no relation between empathy and a doctor's success, 1.3% somewhat disagreed that empathy is a therapeutic skill, 1.7% disagreed, and 1.3% strongly stated that empathy is not a therapeutic skill.

Table 1. Demographic variables.

		Frequency	*p*-value	Inference
Gender	Male	54 (23.5%)	0.302	Not significant
	Female	176 (76.5%)		
Year of study	First year	58 (25.2%)	0.003	Significant
	Second year	31 (13.5%)		
	Third year	73 (31.7%)		
	Fourth year	3 (1.3%)		
	Fifth year	65 (28.3%)		

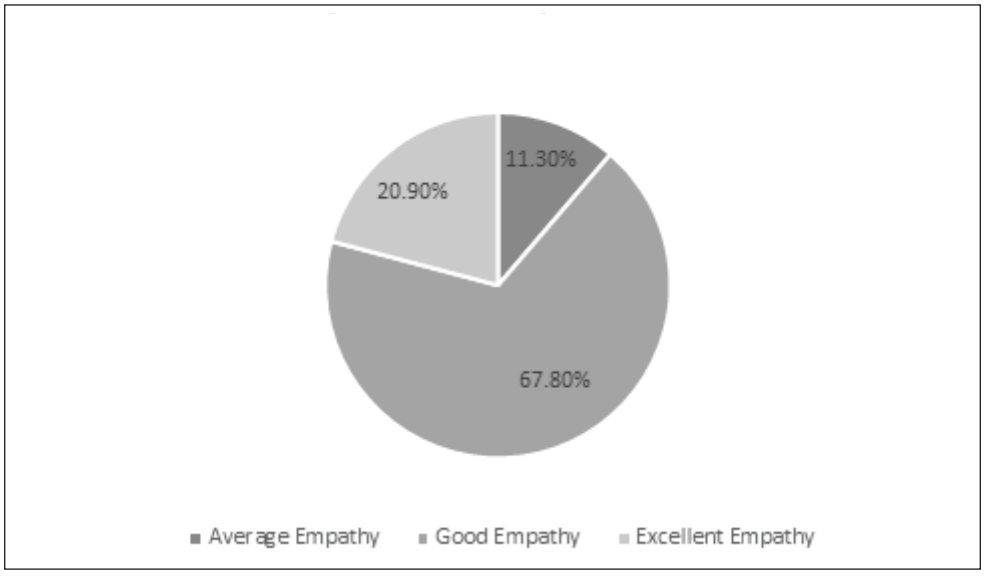

Figure 1. Empathy scores.

A majority of 43.9% (*n* = 101/230) strongly agreed that patients valued having their doctors understand their feelings and that this in itself was therapeutically effective. A majority of 49.1% (*n* = 113/230) fully agreed that physicians' understanding of the emotional state of patients and their families was an important part of the physician–patient relationship.

Do patients feel better when doctors understand how they feel? 69.6% fully agreed. A majority of 50.9% (*n* = 117/230) fully agreed that empathy is an important factor in patient care. A majority of 43.5% (*n* = 100/230) believe that physicians should pay attention to the non-verbal signals and body language of their patients and try to understand what is going on in their minds strongly agreed, and 44.8% agreed that understanding body language is as important as verbal communication in the doctor–patient relationship.

44.8% agreed that doctors should try to think like their patients in order to render better care. A majority of 59.6% agreed that doctors should try to stand in their patients' shoes when providing care to them.

When asked whether a doctor's sense of humor contributes to a better clinical outcome, therwere different views: 32.6% strongly agreed, 28.3% agreed, 11% somewhat agreed, and 17.4% believed that a doctor's humor does not affect clinical outcome. Similarly, only 24.8% stated strongly that emotion plays a role in the treatment of medical illness and 30.9% agreed somewhat that emotion has no place in the treatment of medical illness.

A majority of 23.5% tended to agree that asking patients about personal events did not help them understand their physical symptoms, and 19.6% completely disagreed with this comment. A majority of 43.4% did not agree that the physician's understanding of the patient's feelings, and the feelings of the patient's family members did not affect treatment outcomes. 22.6% said that knowing a patient's personal experience would influence treatment outcomes, and 21.7% tended to agree that it did not.

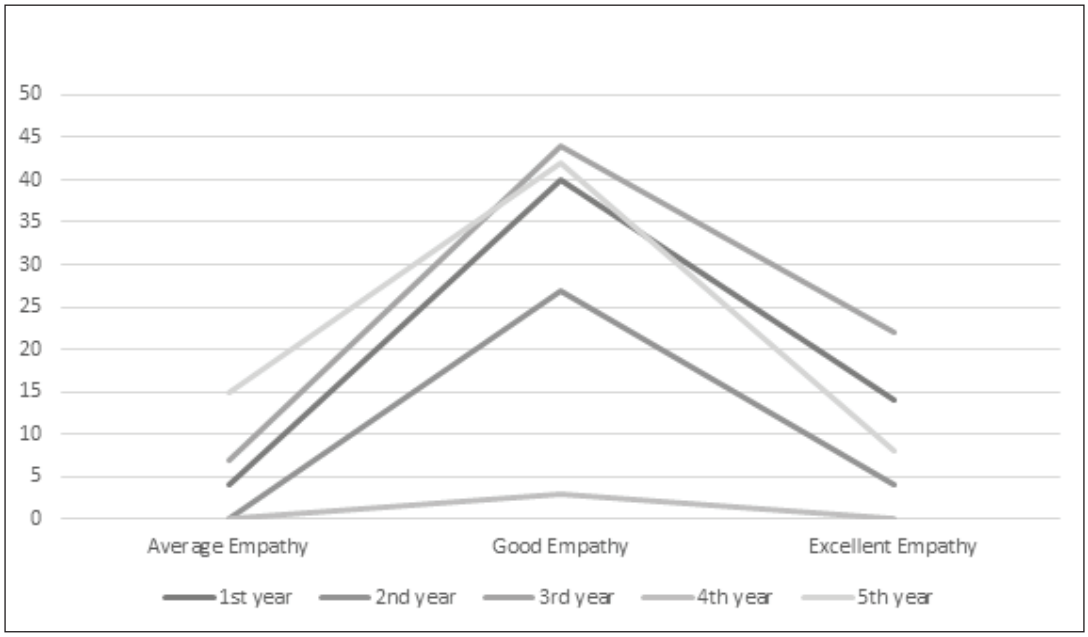

Figure 2. Year of study and empathy scores relation.

A majority of 25.7% answered that it is not important to pay attention to patient's emotions in patient research, and 24.3% answered that emotions are important in patient research.

26.1% somewhat agreed that patients' illnesses can be cured only by targeted treatment, doctors' emotional ties with their patients do not have a significant influence on treatment outcomes and 21.3% disagreed with it.

Most of the participants (86.1%) stated that doctors should not allow themselves to be influenced by strong personal bonds between patients and their family members.

A group of 26.1% stated that they do not enjoy reading non-medical literature or arts now as medical students and 22.2% stated that they still love it.

37.8% said, "Every person is different, and it is difficult to see things from the patient's point of view." In addition, 30.9% answered that the burden on doctors is heavy and it is difficult for medical professionals to think about things from the patient's point of view (Table 2).

Discussion

The definition of cognitive empathy is "the capacity to comprehend another person's predicament without adopting it as one's own" [15]. It is primarily the cognitive empathy type that is valued and pursued in the clinical situation and within the context of the patient-physician relationship. Clinical empathy [15] is the capacity to: a) comprehend the circumstances, perspective, and feelings of the patient; b) convey that knowledge to the patient and confirm its accuracy; and c) act on that understanding in a supportive (therapeutic) manner [15].

According to our research, empathy levels have not significantly changed over time. A year earlier, Colliver et al. [16] reported from a meta-analysis that student empathy levels drop relatively slightly, if at all.

Without establishing a clear causal connection, literature has examined a number of explanations for a decline in empathy. Some researchers draw attention to the topic of burnout in medical students and refer to the literature's finding that a high level of burnout among medical students is associated with a low empathy score [17]. Medical empathy has been linked to stress as well [18].

Chen et al. [19] explained that by encouraging cynicism, emotional distance, and detachment among medical students in their contact with patients while also trying to preserve "professionalism" in the clinical setting, superiors and mentors try to protect their students against psychological distress,

Shapiro et al. [20] also stated that biomedical discourse has caused students to lose sight of empathy and embrace a mechanistic perspective on illness that could reduce patients to a disease or an object.

Professional empathy has been linked to several positive patient and doctor outcomes, including

Table 2. Jefferson scale of empathy: statements to ascertain the empathy levels of medical professionals and students.

	Strongly agree	Agree	Somewhat agree	Neutral	Somewhat disagree	Disagree	Strongly disagree
1. Empathy is a therapeutic skill without which a doctor's success is limited	82	116	22	3	3	4	0
2. Patients value a doctor's understanding of their feelings which is therapeutic in its own right	101	101	24	4	0	0	0
3. Doctors' understanding of the emotional status of their patients, and their families is one important component of the doctor–patient relationship	113	84	22	4	3	4	0
4. Patients feel better when their doctor understands their feelings	160	57	10	3	0	0	0
5. Empathy is an important factor in patients' treatment	117	88	14	3	14	0	0
6. Doctors should try to understand what is going on in their patients' minds by paying attention to their non-verbal cues and body language	100	103	21	6	0	0	0
7. Understanding body language is as important as verbal communication in doctor-patient relationships	81	103	28	7	8		3
8. Doctors should try to think like their patients in order to render better care	42	103	40	17	7	14	7
9. Doctors should try to stand in their patients' shoes when providing care to them	41	137	22	12	4	7	7
10. Doctor's sense of humor contributes to a better clinical outcome	75	65	25	40	11	11	3
11. Emotion has no place in the treatment of medical illness	11	18	71	23	9	41	57
12. Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints	18	34	54	11	27	41	45
13. Doctors' understanding of their patients' feelings and the feelings of their patients' families does not influence treatment outcome	24	40	50	40	8	50	18
14. Attentiveness of patients' personal experiences does not influence treatment outcomes	14	42	50	17	29	52	26
15. Attention to patients' emotions is not important in-patient interview	8	25	59	13	24	45	56
16. Patients' illnesses can be cured only by targeted treatment; therefore, doctors' emotional ties with their patients do not have a significant influence in treatment outcomes	15	41	60	13	34	49	18
17. Doctors should not allow themselves to be influenced by strong personal bonds between patients and their family members	74	78	46	18	8	3	3
18. I do not enjoy reading non-medical literature or the arts	11	33	60	10	12	51	53
19. Because people are different, it is difficult to see things from patients' perspectives	36	87	43	16	14	30	4
20. It is difficult for a healthcare provider to view things from patients' perspectives	17	71	62	17	21	24	18

more accurate diagnosis and treatment, higher patient satisfaction, and treatment compliance [13]; less complaints and litigation, reduced levels of burnout, and stress among doctors [21].

Higher assessments of overall clinical competencies given by medical school professors, lower levels of stress and burnout, stronger interpersonal skills evaluated by patients, and superior teamwork abilities are all connected with medical students' professional empathy scores [22].

Our study indicates that private medical students score highly on empathy. This assertion was supported by a study carried out at a private university in Lima, Peru [4].

Conclusion

Professional empathy among medical students is associated with increased satisfaction with their education, lower levels of stress and burnout, and higher ratings of overall clinical competence. Private medical students have good scores of empathy.

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