

Empathy among Students of a Public-Sector Medical University: A Cross-Sectional Study

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ABSTRACT

Background: Empathy has been a crucial parameter of a doctor-patient relationship. Despite its well-documented importance the current undergraduate medical curriculum does not addresses empathy for future medical professionals Therefore the objectives of this study are to determine the empathy among medical students of Pakistan.

Methods: A cross-sectional study was conducted during February 1st, 2019 till March 16th , 2020 among medical students of Jinnah Sindh Medical University, Karachi. Participants from all five academic years were requested to complete a self-administered questionnaire based on the Jefferson Scale of Empathy-Student Version (JSE-S). Data was analyzed using SPSS version 23.0.

Results: From the sample size collected, (57) 20.9% were males and (216) 79.1% were females. The mean empathy score obtained was 85.16 ± 16.29 (range: 31–127). Empathy was found to be more significantly associated with gender than any other factor, with males being more empathetic than their female fellows. For analysis, two choices of specialties were considered people-oriented and technology-oriented. “People-oriented” career preference was the highest opted choice among first-, second and third year students, while technology-oriented was the highest opted choice among fourth and final year students.

Conclusions: While this research shows that male students exhibited higher empathic concern, an apparent variability in the pattern of empathy can be observed between male and female students throughout their academic years. Therefore, adequate interventions are necessary to enhance empathy among all undergraduate medical students, and further studies should be conducted to find out the cause of this pattern.

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Introduction

Empathy is an integral part of the doctor-patient relationship. According to Wilmer “Failure to emphasis is the basis of unhappy doctor-patient relationships” [1]. In the medical world, empathy comprises of physician’s cognitive understanding of patients’ experiences. Conversing this feeling back to the patient is also a skill [2]. Clinical empathy, according to Mercer and Reynolds, is the ability to comprehend the perspectives, feelings, and situation of the patients [3].

The positive relationship between physician empathy and emotional support to the patient on patient outcome and recovery has been established [1,4]. Efficient communication between doctor and patient can improve patient satisfaction. It helps in empowering the patients, which positively impacts their treatment compliance and adherence, for this reason empathy can also be considered as DNA of medical professionalism [1].

Empathy is believed to be measurable and teachable and over time, various scales developed by different researchers have been used to measure clinical empathy in general population [5,6]. In order to measure content specific and context-relevant empathy among healthcare practitioners and medical students, Jefferson scale of empathy (JSE) was developed in 2001 by Hojat et al [6]. Three versions of JSE were introduced, S-version, HP-version

and HPS-version, which were administered to measure empathy among medical students, healthcare professionals and health profession students other than medical students, respectively [6].

In Pakistan, the current medical education emphasizes more towards knowledge and skills with less importance given to training which develops interpersonal communication and capability to interact with the patients; therefore a substantial gap remains between empathy and medical students. It is very thought provoking for medical educationalist in Pakistan to improve empathy among their medical students. Despite the well-documented importance of empathy in doctor-patient relationship, lack of attention given to this aspect of education in current medical curriculum in Pakistan may result in disparity between undergrad students and requirements of future medical professionals in Pakistan [1,2]. Therefore this study was planned to determine empathy among medical students of Pakistan.

Methods

From February 1st, 2019 till March 16th, 2020 a cross-sectional, observational study was conducted among medical students of Jinnah Sindh Medical University, Karachi. Non-probability consecutive sampling was adapted, and all students from all five academic years were invited to participate. Informed consent was taken. The study was approved by the institutional review board

of Hamdard College of Medicine and Dentistry (Department of Community Health Sciences).

All participants were handed over a self-administered questionnaire. It included two sections. The first section comprised of sociodemographic information include age, sex, year of education, and the choice of specialty. Specialty interest was categorized into people-oriented, technology-oriented and undecided [7]. The second section of the questionnaire comprised of the Jefferson Scale of Empathy– Student version (JSE-S). This inventory consists of 20 statements, some of which are positively phrased, and the others are negatively phrased to reduce bias [2]. Students were required to indicate the extent of their agreement and disagreement of the statements using a 7 point Likert scale where one was “strongly disagree” and 7 “strongly agree”. Hence, the score ranged from 20-140. The responses were reversed for negatively phrased statements. JSE-S was categorized into three subscales–perspective taking, compassionate care, and walking inpatients shoes [7]. Permission to use the questionnaire was obtained [8].

All the obtained data was entered in the statistical package for social sciences (SPSS) for Windows version 23.0 (IBM Corp.,

Armonk, NY, US). Demographic data was analyzed using descriptive statistics. Frequencies and percentages were obtained for categorical data. JSE-S was analyzed as continuous data; mean and standard deviation (SD) were calculated. Independent sample t test was applied for correlation. P-value ≤ 0.05 was taken as statistically significant.

Results

Out of the total 273 students, 57 were male (20.9%) and 216 female students (79.1%). There were 50 (18.3%) first-year students, 51 (18.7%) second year, 59 (21.6%) third year, 50 (18.3%) fourth year and 63 (23.1%) final year students. The mean empathy score of the sample was 85.16 ± 16.29 (range: 31–127).

The empathy levels of students stratified according to their gender and year of education are shown in table 1. It is seen that male students of the first year had the lowest empathy scores (77.5 ± 19.6), while highest empathy was seen among male participants of final year (92.4 ± 9.2). For males, empathy scores increased from the first year (77.5 ± 19.6) to second-year (90.0 ± 21.9) then declined in the clinical years (from 88.3 ± 11.5 to 80.4 ± 18.2) and peaked in the final year. For females, the scores kept on rising from first to final year (table 1).

Table 1: Stratification of mean empathy score according to the year of education and gender of the students (N=273)

Year of education	No of participants	Gender	Empathy score (mean \pm SD)	P-value
First year	50 (18.3%)	Male	77.5 ± 19.6	0.51
		Female	82.1 ± 20.8	
Second year	51 (18.7%)	Male	90.0 ± 21.9	0.28
		Female	82.4 ± 14.2	
Third year	59 (21.6%)	Male	88.3 ± 11.5	0.47
		Female	84.0 ± 21.9	
Fourth year	50 (18.3%)	Male	80.4 ± 18.2	0.18
		Female	88.9 ± 16.2	
Final year	63 (23.1%)	Male	92.4 ± 9.2	0.11
		Female	86.5 ± 14.3	

For analysis, two choices of specialties were considered – people-oriented and technology-oriented. “People-oriented” career preference was the highest opted choice among first-, second- and third-year students, while ‘technology-oriented’ career preference was the highest opted choice among fourth- and final-year students. The highest response was received from final year students, who scored a mean of 86.8 ± 14.2 for people-oriented choice of specialty, and 90.1 ± 9.7 for technology-oriented specialties. Table 2 stratifies the choices of specialties according to the year of education among our study participants. JSE-S was further employed to investigate empathy on three subscales and categorize according to year of education, gender, and specialty choice, as shown in table 3.

Table 2: Stratification of mean empathy score according to the year of education and choice of the specialty of the students (N=212)

Year of education	No of participants	Choice of specialty	Empathy score (mean \pm SD)	P-value
First year	43 (%)	People oriented	84.9 ± 17.1	0.11
		Technology oriented	74.5 ± 23.7	
Second year	38 (%)	People oriented	81.9 ± 17.0	0.28
		Technology oriented	79.6 ± 14.2	
Third year	41 (%)	People oriented	85.6 ± 12.8	0.84
		Technology oriented	84.5 ± 24.6	
Fourth year	40 (%)	People oriented	81.6 ± 16.5	0.11
		Technology oriented	89.6 ± 14.5	
Final year	50 (%)	People oriented	86.8 ± 14.2	0.35
		Technology oriented	90.1 ± 9.7	

Table 3: Stratification of student characteristics according to the sub-classes of Jefferson Empathy Scale (N=273)

Student characteristics	Walking in the patient's shoes (mean \pm SD)	Perspective-taking (mean \pm SD)	Compassionate care (mean \pm SD)
Year of education			
First year	7.86 \pm 2.77	51.68 \pm 17.03	21.54 \pm 7.98
Second year	8.17 \pm 2.47	50.64 \pm 14.25	24.31 \pm 9.07
Third year	7.69 \pm 2.69	52.33 \pm 13.03	25.10 \pm 8.62
Fourth year	8.58 \pm 3.09	54.64 \pm 13.07	24.32 \pm 8.14
Final year	8.66 \pm 2.72	54.36 \pm 11.86	25.14 \pm 7.86
Gender			
Male	8.45 \pm 2.86	51.49 \pm 11.83	26.59 \pm 9.29
Female	8.13 \pm 2.74	53.13 \pm 14.30	23.52 \pm 8.02
Choice of speciality	8.23 \pm 2.70	53.10 \pm 14.31	23.14 \pm 8.33
Technology oriented	7.98 \pm 2.80	51.06 \pm 14.72	24.48 \pm 8.53
Undecided	8.47 \pm 2.83	54.91 \pm 11.00	25.60 \pm 8.09

Perspective-taking received the most responses: it was highest in fourth-year medical students (54.64 \pm 13.07), female gender (53.13 \pm 14.30) and students whose choice of specialty remains undecided (54.91 \pm 11.00). Mean score of *Walking inpatient shoes* and *Compassionate care* was higher in final year students (8.66 \pm 2.72 and 25.14 \pm 7.86 respectively), male gender (8.45 \pm 2.86 and 26.59 \pm 9.29 respectively) and students whose choice of specialty was undecided (8.47 \pm 2.83 and 25.60 \pm 8.09 respectively).

Discussion

The study reported that male students have higher empathy score than females. Male empathy score was lower in the preclinical year as compared to a paraclinical year with a peaked score in the final year.

The mean empathy score in our study was comparatively lower than those studies conducted in other parts of Asia, ranging from 102–110 or 110–115 in Western countries [9–12]. Physicians in Asia, being more paternalistic might be explaining our findings of low empathy score in Pakistan, which is quite alarming for doctor-patient relationship [13]. Disparities in empathy score in different countries have been partially justified by different methods adopted in sample selection, student selection, education curriculum under different culture and traditions, and the availability of role models [4]. Most of the times, when establishing educational objectives, the affective education is not taken into account, which could be a reason for low empathy score in this study [14]. In 2018 a cross-sectional study, with Pakistani medical students, reported mean empathy score of 4.51, which is by far the lowest documented empathy score on JSPE-S version in Pakistan [2]. Another research conducted among undergraduate medical students in Pakistan was inconsistent with our result with relatively similar total mean empathy score of 90.63 [15].

Previous studies in the literature reported that female medical students are more empathetic than their male counterparts [15–17]. In contrast, this study showed that male empathy scores tended to be higher than females in the second, third, and final professional year. While female empathy tended to be more in the first year and fourth year. Stereotypically, females are portrayed as having more humanistic and caring nature which could be a reason for females of the first year to be more empathic [18]. However, our results were contrary to the literature. Undoubtedly, women possess nurturing and caring nature and men are portrayed as less emotional being; however, men also have a caring and empathic attitude towards the people around them [19]. Another similar study concluded that females have significantly higher empathy

score (4.58 \pm 0.81) [2]. A Result of another study conducted with Iranian medical students did not support the hypothesis of females being more empathetic. They found no difference in mean empathy scores of male and female students [20]. Our results were not in line with the literature attributing this gender difference in the empathy level to evolutionary, social learning factors and gender role expectations. This difference in gender empathy may also suggest a different manner of interpersonal care provided to the patients, generating a significant difference in empathy between the two genders [15]. However, more studies should be conducted to evaluate the role of gender in clinical empathy.

In a previously published study, empathy decreased in the second year while an increase was seen in third year, with highest empathy measured in fourth year highlighting the fact that pre-clinical years decrease empathy as compared to paraclinical and clinical years [12]. Findings of our study supported the literature as our male students score higher in clinical years. This could be due to the fact that these students were actively seeing patients and more clinical exposure was given to them. Another recently published study conducted in Lahore, Pakistan is contrary to our results that empathy level in final year students fall due to increase workload, lack of sleep and inappropriate relaxation during medical training. Stress and burnout also affects empathy level in final professional year [15]. Another study using the Jefferson scale (S-version) conducted in Ghulam Muhammad Mahar Medical College, Sukkur in August 2018, which classified medical students according to year of education, gender and career preference, resulted in a mean empathy score of 98.11 \pm 12.31. The results of the study did not support our study as lowest empathy score was found in the final year [3].

The results provided a slight difference in empathy score of students opting for different specialty choices, but it was not statistically significant. As reported in previously published studies, people scoring high on JSE are more likely to opt for people-oriented specialties [2,16,18–22]. This study also came in line with the literature. Students of the first, second, and third-year who received higher empathy score opted for people-oriented specialties. This may be because this field requires extensive and prolonged exposure to patients giving them more opportunity to show their concern towards the patient and their well-being [6]. However, it does not impose that those students who opted for technology-oriented specialty lacked empathy, but it was comparatively low for students choosing people-oriented specialty [2]. Results seen in the fourth and final professional year were opposite and quite surprising though not statistically significant

as students scoring high on Jefferson empathy scale opted for technology-oriented specialty. These results were not consistent with other study conducted by Tariq et al. in Pakistan as they failed to find any difference in empathy score between people choosing people-oriented and technology-oriented fields as their future preferences [1].

The study has its limitations too. It was a single center study with small sample size; its results cannot be used to represent empathy levels among medical undergraduates nationwide. The study population included only from public medical university in Karachi and maybe leaving out another huge chunk of students with somewhat different mindsets shaping their empathy. It is recommended that this study should be conducted on a larger scale targeting medical students nationwide. Self-reported measures are frequently associated with methodological problems. One of them is the extent to which responses precisely reflects the students' experiences and expectation of their empathy is unable to determine. This permits further studies to comprehend how emotions are communicated in interactive situations. Other findings limited in the accurate image of change in the level of empathy because this is a cross-sectional study, examined empathy level in five academic years. A prospective follow up study is needed every year from starting of the first year until their graduation.

As this study concluded that male correspondents scored higher than female correspondents contrary to many other studies, give us the basis that more research needs to be done in this area to get a better perception. Secondly, emphasis should be given on the fact that measures must be taken to increase empathy among the students of medicine by indulging them into subjects like behavioral sciences, communication skills and ethics. They should be included in the curriculum to surpass doctor-patient relationship. Furthermore, by arranging workshops and seminars as it will help them to have a better understanding of the patient's condition and build a trustworthy doctor-patient relationship.

Conclusion

We concluded that male students exhibited higher empathic concern than female students. Empathy in the medical profession in one of the vital components of increasing physician-patient relationship, patient's compliance to medications and beneficial clinical outcomes. Doctors who are more empathetic are less likely to experience burnout. Previous research has shown a decline in the level of empathy among medical students of both genders. However, our research shows variability in the pattern of empathy among male students and increasing level in female students with ascending academic years and a relative dip in the final year. Hence interventions need to be carried out in enhancing empathy among all undergraduate medical students, and further studies should be conducted to find out the cause of this pattern. Age, academic stress and self-esteem influences medical students' empathy.

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