Original Article :

Clinical empathy among medical students at Al-Imam University, Saudi Arabia, by using the Jefferson Scale of Empathy

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Abstract

Background & Aims:
Clinical empathy is an integral part of medical education and an essential aspect of humanity. This study aimed to evaluate clinical empathy among medical students in a medical school in Saudi Arabia and point out the associated factors to empathy.

Methods:
This cross-sectional descriptive study was carried out among medical students at Al-Imam University from February 2022 to March 2022. The questionnaire included information on the age and gender and questions regarding the participants' GPA, year of study, and the specialty they aimed to pursue, in addition to Jefferson's Scale of Empathy. The data was analyzed in SPSS 24, and descriptive statistics were presented with means, standard deviations, frequencies, and percentages. The student's t-test was used for independent group analysis, and ANOVA was conducted for multiple group analysis.

Results:
Significant differences were found in terms of gender, where females scored higher on the empathy scale. Those with the highest and lowest GPA scored highest on the empathy scale. Medical students in their first and fourth years of education had the highest levels of empathy, and those who chose a non-family medical field showed higher scores on the empathy scale.

Conclusion:
Significant differences were found in gender, GPA, year of education, and specialty choice. Future studies should evaluate the socio-demographic background of the participants and their voluntary choice of medicine for a better understanding of the associated factors.

Key Words:
Empathy; Medical students; Saudi; Jefferson Scale

Introduction

The medical profession has always been seen as a humane profession where the care provided may be described as ineffective or even detrimental when lacking humanistic qualities[1]. Humanity is the art of understanding, the ability to love, care for and show empathy towards others[2]. Empathy in medical practice, or clinical empathy, is 'a sense of connection between the healthcare worker and the patient as a result of perspective taking arising from imaginative, affective and cognitive processes, which are expressed through behaviors and good communication skills that convey genuine concern'[3]. The expression of compassion to the patient and good communication lead to better understanding and application of the recommendations from the patient[4]. This, along with better patient outcomes and decreasing complaints of medical malpractice[5]. Highlighting the importance of clinical empathy, it was included in the curriculum of medical studies in some countries of the world[6], and the evaluation of this concept has been widely studied among medical students across the years of studies[7, 8].

What is already known about clinical empathy is that it involves affection and is circumstantial; however, it is hard to study[9]. From all that passed, clinical empathy was evaluated through three constructs: perspective taking, compassionate care, and standing in the patient's shoes[7]. Evaluating the clinical empathy construct among medical students has shown interest in the recent literature on how it may affect patient care and patient outcomes. However, the need to evaluate the level of clinical empathy is a must to determine the needed future interventions necessary to guide practice. This should be done while considering the different cultural aspects of the cohort students and so should not depend on the international literature.

Saudi Arabia is a country in Western Asia that adopts a collectivist culture outlining the importance of family connectedness and dominance of the male over the female gender. While clinical empathy has been studied in some areas of the country[10], the lack of national representation calls for the need to conduct similar studies in areas not covered in previous studies. Therefore, this paper aimed to evaluate the empathy level across the five years of studies among medical students at Al-Imam University in Saudi and point out the associated factors linked to empathy.

Methods

A cross-sectional design involving a self-administered questionnaire was administered to all medical students at Al-

Imam University in Saudi Arabia studying across five years of medical course from February 2022 to March 2022. Undergraduate medical students of both genders enrolled in the college of medicine were included in the study. According to the most recent E-Register statistics from the Students' Affairs division, there were 654 enrolled students in Al-Imam University's college of medicine at the time of the study, and all were included. Therefore, the participants were not subjected to any exclusionary criteria.

The medical program at Al-Imam University's college of medicine begins in the second year and ends in the sixth. The first year, commonly known as the preparation year, is overseen by the Deanship of Common First Year in a variety of ways. As a result, the study only included medical students in their second to the sixth year of medical school. Students in the pre-clinical phase attended block modules in Basic Therapeutics, Movement & its Control, Endocrine and Reproduction, Clinical skills foundation, and two longitudinal modules in Complementary and Alternative Medicine and Research. On the other hand, students in the Clinical phase took part in blocks in Family Medicine, Dermatology, Psychiatry, Emergency Medicine, and Surgery. The data was collected using the complete enumeration sampling technique. The study participants were given access to an online self-administered google form to collect responses. The goal of the study, the participants' confidentiality, and their free will to participate were all explained in the questionnaire's introduction section.

Following administration and ethical approval from the Deanship of Research, Al-Imam University, with IRB No 180/2022, the questionnaire was distributed electronically to all medical students. All items of the questionnaire were coded as the required entry for proceeding with completing the questionnaire to avoid missing data. Data collection took place between February 2022 and March 2022. The questionnaire included questions on age and gender and regarding the participants' Grade Points Average (GPA), year of study, and the specialty or subspecialty they wished to pursue. Finally, the Jefferson scale of empathy was administered in the English Language.

The Jefferson Scale of Empathy is a widely used self-administered questionnaire uniquely constructed to examine clinical empathy in medical students. It contains 20 items on a 7-point Likert scale ranging from strongly agree to strongly disagree. The items address three constructs: namely, compassionate care with eight negatively coded items, walking in patients'

shoes with two negatively coded items, and perspective taking with ten positively coded items. The scores range from 20 to 140, with higher scores indicating a greater degree of clinical empathy[11]. The scale has been refined, tailored, and validated7. The internal consistency was high, with a Cronbach alpha value of 0.82 (range 0.80–0.85). Positive and significant Item-total score correlations were found (median 0.45, $p < 0.01$). The test-retest intraclass correlation coefficient was 0.68 (range 0.42–0.82) [12]. The scale has been used extensively among medical students globally and has produced comparable results from diverse cultural backgrounds[12]. Approval to use the questionnaire was granted from the developers of the scale.

Data analysis

Descriptive statistics were presented with means, standard deviations, frequencies, and percentages. Subgroup analysis was done based on gender against, age, and the total scale score. The continuous variables were considered normally distributed based on the normality curve. The student's t-test was used for independent group analysis, and ANOVA was conducted for multiple group analysis. The p-value was considered significant when below 0.05, and analysis was done using SPSS version 24.

Results

Descriptive data

The questionnaire was administered to all 654 enrolled students. The total number of respondents were 586, with the majority being male participants (n=385, 65.7%). The highest number of participants were in the third (n=140, 23.4%) and the second year of study (n= 131, 22.4%). Almost half of the participants (49.7%) had a GPA that ranged between 3.7 and 4.4 (49.7%), followed by 4.5 and 5 (31.9%). More than one-third of the students had not decided on their specialty at the time of the study (33.4%). Of those who did decide (66.6%), those who chose family medicine accounted for 7.2%, and those who chose pediatrics were 4.3%. The details of the participant characteristics are presented in Table 1.

Table 1: Empathy Scores by gender and year of study in medical students at Al-Imam University

Year	Gender	N (%)	Mean ±SD	P-value*
1st Year	Male	65 (11.9%)	98.65±14.59	0.001
	Female	41 (6.9%)	108.98±14.23	
2nd Year	Male	76 (12.9%)	92.01±17.13	0.264
	Female	55 (9.3%)	95.89±22.43	
3rd year	Male	92 (16.6)	85.09±17.25	0.367
	Female	48 (8.1%)	87.92±18.18	
4th year	Male	66 (11.2%)	80.52±19.61	0.037
	Female	33 (5.6%)	89.27±18.99	
5th year	Male	86 (14.6%)	79.34±18.71	0.579
	Female	24 (4.09%)	76.96±17.84	
* Independent Sample t-test				

Outcome data

The empathy score was highest among the

first-year students, with a mean of 103.81 (SD= 14.41), and decreased over the years to reach 78.15 (SD=18.27), as presented in Table 2.

Table 2: Association of mean empathy scores between gender, year of education, GPA, and specialty among medical students at Al-Imam University

Characteristics	N	Number of participants (%)	Mean ±Standard Deviation	95% Confidence Interval	P-value
Gender					
Male	385	385 (65.7%)	86.68±18.84	(84.79-88.56)	<0.001*
Female	201	201 (34.3%)	93.31±21.03	(90.38-96.23)	
Year of Study					
1st Year	106	106 (18.1%)	102.64±15.24	(99.71-105.58)	<0.001#
2nd Year	131	131 (22.4%)	93.64±19.54	(90.26-97.02)	
3rd Year	140	140 (23.9%)	86.06±17.56	(83.12-88.99)	
4th Year	99	99 (16.9%)	83.43±19.75	(79.50-87.37)	
5th Year	110	110 (18.8%)	78.82±18.47	(75.33-82.31)	
GPA					
2.1-2.6	21	21 (3.6%)	88.29±23.81	(77.45-99.12)	0.486#
2.7-3.6	87	87 (14.8%)	86.05±19.68	(81.85-90.24)	
3.7-4.4	291	291 (49.7%)	89.20±19.58	(86.94-91.45)	
4.5-5	187	187 (31.9%)	89.99±19.92	(87.12-92.87)	
Decision					
Decided	390	390 (66.6%)	87.27±19.60	(85.32-89.22)	0.004*
Undecided	196	196 (33.4%)	92.30±19.97	(89.48-95.11)	
Family/Non-Family medicine					
Non-family medicine	544	544 (92.8%)	89.67±19.83	(88.00-91.34)	0.002*
Family medicine	42	42 (7.2%)	79.69±17.99	(74.09-85.30)	
Pediatric/Non-Pediatric					
Non-Pediatric	561	561 (95.7%)	88.77±19.80	(87.12-90.41)	0.288*
Pediatric	25	25 (4.3%)	93.08±20.90	(84.45-101.71)	

* Independent Sample t-test;
# ANOVA

Figure 1 presents a schematic visual of the decreased scores over the years.

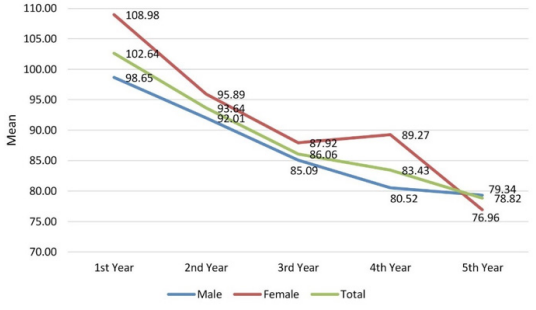


Figure 1: Figure showing empathy scores as per year of education

Main results

When making group comparisons, significant differences were noted in empathy scores in terms of gender and year of study. Significantly higher scores were noted in the female participants in the first (mean score=108.98, SD=14.23 vs. mean score=98.65, SD=14.59; p=0.01 respectively) and the fourth year

(mean score=89.27, SD=18.99 vs. mean scores=80.52, SD=19.61; p=0.037 respectively) when compared to their male counterparts. When looking at the details of the constructs within the empathy scale, significance was also noted against gender and the year of study, where female participants scored significantly higher on perspective, compassion, and walking in a patient's shoes than male participants, as presented in Table 3.

Similarly, the scores differed between the

Table 3: Mean Empathy Component Scores among medical students at Al-Imam University

	Perspective	Compassionate	Walking Patient's Shoes
Gender			
Male	45.40±13.71	33.66±11.63	7.62±3.15
Female	48.93±14.28	36.06±12.64	8.32±3.41
P-value*	0.004	0.021	0.013
Year			
1st Year	52.59±12.64	39.68±11.52	10.37±3.14
2nd Year	48.53±14.56	36.98±12.28	8.13±3.42
3rd Year	46.05±13.10	32.26±11.00	7.74±3.16
4th Year	43.90±13.77	32.68±11.72	6.86±2.69
5th Year	41.71±13.59	30.95±11.63	6.16±2.05
P-value #	<0.001	<0.001	<0.001
GPA			
2.1-2.6	44.19±14.48	35.57±11.30	8.52±3.47
2.7-3.6	44.80±14.45	34.23±11.46	7.01±2.98
3.7-4.4	47.06±14.16	34.26±12.25	7.88±3.19
4.5-5	47.02±13.48	34.83±12.10	8.15±3.40
P-value #	0.47	0.926	0.04
Decision			
Decided	46.26±13.95	33.43±11.80	7.58±3.20
Undecided	47.31±14.10	36.58±12.23	8.41±3.30
P-value*	0.393	0.003	0.002
Family/Non-family medicine			
Non-family medicine	47.03±13.96	34.66±12.08	7.98±3.29
Family medicine	41.17±13.47	32.19±11.17	6.33±2.27
P-value*	0.009	0.2	0.001
Pediatric/Non-Pediatric			
Non-pediatric	46.53±13.99	34.41±12.10	7.83±3.27
Pediatric	48.36±14.22	36.16±10.39	8.56±2.86
P-value*	0.523	0.477	0.271

* Independent Sample t-test;

ANOVA

early and the senior years of study, where the latter scored significantly lower on all three constructs of the scale. On the other hand, scores varied across the constructs when comparing the GPA, where those who had the highest and the lowest GPA scored highest on the walking patient's shows construct, while no significant difference was noticed across the five GPA scores in terms of perspective and being compassionate. Additionally, those who had not decided on their medical profession choice scored significantly higher on the compassion and walking in the patients' shoes scores as compared to those who had decided. On the other hand, those who had chosen specialties other than family medicine scored significantly higher on the perspective and the walking in the patient's shoes constructs, while no difference was noted between those who chose pediatric professions and their counterparts. The details of these comparisons are presented in Table 3.

Discussion

The aim of the study was to evaluate clinical empathy among medical students in Saudi Arabia. This was addressed through a cross-sectional study involving a self-administered questionnaire using Jefferson's scale of empathy. The main results showed significant differences between genders in the first and fourth year of education, with female participants scoring higher than male participants. The findings were comparable to another study conducted in the same country where female participants scored higher than male participants in two years of study compared to the other years. Although not the same years, second and fifth, empathy in females in earlier years may be influenced by their new encounters with ill patients and in later years by their dedication to their specialty of choice. The difference in years may be due to the different curriculums adopted in different parts of the country [10]. In terms of constructs, female participants scored higher on the three subscales as compared to male participants, similar to the findings of another study reporting higher scores in favor of female participants[13]. An earlier study, however, reported higher scores for female participants on the perspective to construct only [8]. The latter was a nationwide study conducted in the United States, a country with a different cultural profile than the current study's setting. The gender-specific empathy was also seen by Charles Darwin, which he elaborated in his book, "The Descent of Man," where he described how women have more tenderness and lower selfishness than men, and that women extend their maternal instincts to other creatures [14].

On the other hand, significant differences were seen in only one construct, walking in patients' shoes, when studying the GPA of the medical students. Those with lower GPAs scored the highest on the empathy scale. This finding contradicts an earlier finding which showed that those who performed better academically had higher empathy scores on this particular subscale [15]. In a collectivist society, a surprising finding was the lower scores among those who chose family medicine as their future track than those who chose other tracks. No studies compared clinical empathy scores among medical students willing to pursue the family medicine specialty. However, no difference was found between those who wished to take a clinical-based specialty with those willing to surgical or basic medicine specialty [5]. On the other hand, a study in Brazil showed that students who chose a people-oriented specialty (like family medicine) obtained significantly higher mean scores [16].

Similar to the current study findings, the decreasing scores across the years were also reported in a systematic review paper [17]. This decrease can be interpreted as future physicians developing a hard shell as they encounter more patients reflected in "changed perspectives" and "resilience" as reported in a qualitative study evaluating the need for resiliency training among medical students in Singapore [18].

In terms of limitations, different empathy scales evaluate different aspects of a person's empathy level; thus, the use of a clinical empathy score does not necessarily evaluate one's general empathy, which might be directly impacted by sociocultural factors. The results can be further explained by evaluating general empathy among these students in future studies and dwelling more on their socio-demographic background. Another important aspect to be studied in future studies is the voluntary choice of the medical profession, which was shown to be an important modulator in previous studies. This was not evaluated in the current study and could also play a role in the scores. One important thing to consider when reporting findings from other studies is that all previously reported studies were conducted before the COVID-19 pandemic, which has subjected people in the medical profession to varying feelings of fear, anxiety, and panic, to name a few. These feelings were likely to affect the empathy scores of individuals subjected to the pandemic.

Conclusion

The study assessed empathy among Saudi Arabian medical students using an international validated scale, Jefferson's empathy scale. As seen, significant differences were

found in terms of gender, GPA, years of education, and specialty choice. The study showed that empathy scores decreased throughout the years of study. It is necessary to emphasize the patient-physician relationship throughout the medical program to highlight and stimulate the empathy level of medical students as they progress through their medical school years. Future studies in studying empathy in the same population should dwell more on the socio-demographic background and the voluntary choice of their future career of the students to gain a better understanding of their empathy profile.

List of abbreviations in the order of appearance

Grade Points Average (GPA)

ANOVA- Analysis of Variance

SPSS- Statistical Package for Social Sciences

SD- Standard Deviation

COVID 19- Coronavirus Disease- 2019

Conflict of Interest:

The author declares no conflict of interest.

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