Research Article

Evaluation of the Erosion of Empathy in Medical Education and Clinical Practise: A Cross-Sectional Study

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Abstract:

Background: Understanding a patient's opinions and experiences on a cognitive level is empathy. This helps the patient feel valued and validated, which in turn improves satisfaction, results, and communication efficiency. Ironically, despite medical schools' best efforts to instill these traits, there has been a reported reduction in the enthusiasm and humanitarianism of medical students. The focus placed in modern medical school on a doctor's emotional distance, affective distance, and professional neutrality may be misunderstood or misguided, which can lead to a decrease in empathy.

Objectives: To assess the fundamental causes of a loss in empathy during medical school and professional practise, as well as the relationship between this decline and clinical results.

Methodology: A self-administered questionnaire with 20 items spread across three domains and scored on a 4-point Likert scale was given to 90 participants, including medical students, house officers and postgraduate students from King Edward Medical University and Mayo Hospital, as part of a quantitative survey method over the course of six months. Utilising SPSS (23), all calculations were completed. The standard deviation was applied to data with numerical values and the mean. Using percentages and frequencies, we analysed categorical data. Gender, age groupings, study year, and current educational standards were all compared using a chi-square test.

Results: Our study found a favourable relationship between empathy levels and gender (p=0.024), present educational requirements (p=0.0285), and age (p=0.0286). Females were more likely than males to strongly agree that a patient's emotional state is a significant component of the doctor-patient relationship (71.6%) and to consider empathy as a crucial therapeutic component (65.7%). Empathy is also influenced by other elements like pressures related to academic achievement, excessive job hours, sleep deprivation and the following rise in responsibilities with age.

Conclusion: The factors influencing students' and doctors' empathy levels were examined in this research project. Furthermore, it demonstrated how gender has a significant impact on empathy because women typically exhibit higher levels of empathy than men. Empathy levels and the study year did not significantly correlate. Age did, however, seem to cause a drop in empathy. Empathy levels and the current educational standards were found to be negatively correlated, with postgraduate trainees' empathy levels being lower than those of individuals working at homes. Future studies are required to determine whether empathy levels affect clinical training and patient outcomes, and if so, whether interventions can be created to lessen this effect.

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INTRODUCTION:

With the goal of treating illness and raising the standard of living for their patients, medical students set out on their path to become doctors. Empathy is the cornerstone of doctor-patient communication. The doctor can convey to the patient that they are comprehending their opinions and experiences thanks to cognitive recognition. The patient can feel appreciated and affirmed as a result of this understanding. Additionally, it encourages both physician and patient satisfaction and aids in enhancing patient outcomes. The accuracy of the patient's information, the doctor's diagnostic abilities, and the frequency of communication errors are also all improved by empathy.

Ironically, despite the faculty of medical schools' best efforts to instill these traits, there has been a reported fall in the enthusiasm and humanitarianism of medical students.

As they progress through medical school, a significant proportion of medical students are apparently developing pessimism about academic life and the medical profession. There have also been claims that medical students' empathy may be declining due to the focus placed in modern medical school on the doctor's professional neutrality, affective distance, and emotional detachment. Lack of mentors and educational opportunities have been linked to a lack of empathy in medical school.

Empathy is a critical component of patient care that, according to medical educators, must be developed during medical education and can be tested as part of medical school entrance. In a manner similar to this, empathy plays a critical role in "professionalism" in the medical industry. Empirical studies on empathy in medical professionals and students are continuously being conducted. An accurate and focused instrument with strong psychometric properties is one reason why additional empirical research is required.

We have described a number of measures for assessing empathy for the general public. However, there isn't a valid psychometric tool available to assess empathy in medical students and practitioners. Medical students and doctors need a practical way to quantify empathy. A measure like this can be used to assess how well educational initiatives to encourage empathy have worked. To fulfill this need, the Jefferson Scale of Physician Empathy was developed. to evaluate the fundamental causes of a reduction in empathy during medical school and clinical practise and its relationship to clinical outcomes.

A cross-sectional survey of medical students at Shiraz Medical School in southern Iran was conducted in 2010. They created a new Jefferson Scale of Physician Empathy questionnaire in Iranian. They came to the conclusion that as students' ages and educational levels rose, the empathy score fell. At the basic science level, the rate of empathy was higher overall than at the clinical level. Empathy was rated the greatest by first-year students and the lowest by seventh-year students. Comparing male and female pupils, female students scored on empathy more often.[1]

The Empathy Quotient (EQ) scale, which consists of 60 questions, was used as the basis for a study by students at Ziauddin University Medical College in Karachi, Pakistan. Between the first- and fifth-year

medical students, there was no discernible variation in the levels of empathy according to their analyses. But it was shown that women showed more empathy than men did. [2]

A cross-sectional study was conducted at the St. Augustine Campus of the University of the West Indies to examine undergraduate students' self-reported empathy levels. The Jefferson Scale of Empathy was self-administered by students beginning their first year of study in the fields of nursing, pharmacy, veterinary medicine, dentistry, and medicine. Students who were female and over 27 years old exhibited greater empathy than those who were male and under 21. Nursing and dental students demonstrated the greatest mean empathy scores at enrollment to university. Repeat testing revealed a reduction in mean empathy scores across all five categories, with the medical, nursing, and dentistry students' declines reaching statistical significance.[3]

The JSPE for students at Okayama University Medical School featured 400 Japanese students from all six years. The correlations between the individual items and the overall score were computed. Factor analysis validated the three qualities of "perspective taking," "compassionate care," and "ability to stand in the patient's shoes," which appeared in American and Mexican medical students. This cross-sectional study's findings revealed that women outperformed men and that empathy levels increased as students moved through medical school.[4]

In 2006, the Boston University School of Medicine performed a cross-sectional study of its students, polling both incoming freshmen and each class near the end of the school year. Participating in the study were 658 students. The class of medical students in their first year scored highest on empathy, whereas the class of students in their fourth year scored lowest. Students who favoured people-oriented specialties performed better on the empathy scale than those who preferred technology-oriented specialties. Female students were more likely than male students to choose specialties in human services. The JSPE-S scores of females were higher than those of males.[5]

Another study found that doctors in specialties that are "people-oriented" and "technology-oriented" differed significantly from men and women, suggesting that some aspects of empathy could be more influenced by a person's gender or field of study.[6]

Significant disparities in empathy ratings were found between medical school years, but not between genders, in a study of Korean medical students.[7]

One study on medical students examined the choice of specialty as a predictor of self-perceived empathy and discovered that students who selected patient-oriented specializations outperformed those who selected patient-remote specialties (such as surgery or radiology) on empathy tests. Studies on distress found that it had a substantial impact on how well-being and empathy were perceived by medical students and residents (For instance, burnout, a low sense of wellbeing, a lower quality of life, and depression). Nearly all research took into account the question of why trainees experience discomfort because it appears to be a major factor in the loss of empathy. [8]

Residency in internal medicine can be difficult, which might cause common mood disorders. Although

graduating residents appear to be doing better than the general population, several aspects of their mood problems and empathy never entirely recover from their internship year.[9]

Another study examined the measurement properties of the Jefferson Scale of Physician Empathy (JSPE) adapted for administration to health profession students (JSE-HPS version) in the baccalaureate nursing (BSN) programme within the College of Health Professions at a public university in the southeast of the United States. The demographic survey, which included 20 items, was completed by 265 BSN students. Both older students and women outperformed their younger colleagues in terms of test scores. The participant's importance of religion, previous non-nursing degrees, or ethnicity did not significantly affect their empathy scores. [10]

An extensive review of data on trainee empathy reveals that the decline in empathy during medical school and residency impairs efforts to uphold professionalism and may jeopardise the quality of healthcare. [11]

Another study examined emergency health (paramedic), nursing, and midwifery students in their first, second, and third years at Monash University in Australia using the Jefferson Scale of Empathy-Health Professional (JSE-HP). Compared to nursing and emergency health students, empathy scores among students studying midwifery were found to be higher. Students in their second and third years performed better than those in their first years. [12]

To assess the fundamental causes of the loss in empathy that occurs during medical school and clinical practise. Underlying factors that determine the levels of empathy in medical practitioners.

- Erosion of empathy
- Clinical outcomes
- Doctor-patient relationship
- Increased workload on doctors
- The meager amount of salaries compared to other more accessible professions
- Empathy guidelines
- Behavioral changes
- To emphasize the main reasons for the decline in professionalism among doctors.
- To increase the clinical efficacy of doctors by increasing the number of incentives.
- To lay stress on the betterment of doctor-patient relations.

H_1: Relationship between evaluated factors (age, gender, study year, and educational requirements) and erosion of empathy

H_0: No relationship between considered factors (age, gender, year of study, academic parameters) and decline of empathy.

MATERIALS AND METHODS:

In order to collect information from clinical practitioners and medical students, cross-sectional research methodology was used in this study.

The study's targeted population or participants were clinical practitioners, including house officers and postgraduates, ages 21 to 26 years old working at Mayo Hospital, Lahore, and medical students in classes ranging from 20 to 23 years studying at King Edward Medical University.

A sample of 90 medical students & clinical practitioners was drawn from King Edward Medical

University & Mayo Hospital in Lahore.

A self-administered questionnaire designed to gather data from a group of chosen clinical practitioners and medical school students served as the data collecting tool in this study's design. In order to investigate the reasons behind any changes in empathy, we also asked participants to respond to a few open-ended questions at the conclusion of each survey. 90 clinical practitioners and medical students were selected for the sample using simple random selection.

At the King Edward Medical University and Mayo Hospital in Lahore, the survey was conducted during the week. The principal tool for data collection was a "Self-administered Questionnaire." Successful inter-active discussion sessions with the research participants were conducted to clarify the contents of a questionnaire being issued.

Before distributing the questionnaire, detailed instructions were given to all respondents. Students were instructed to carefully read each question, understand its content, and then annotate the appropriate key option that was provided for each one. After completion, the questionnaires were collected & researchers conveyed a humble "thanks" to the participants. The entire survey was monitored carefully & vigilantly.

A systematic questionnaire based on the Jefferson scale of physician empathy (JSPE), with 20 items divided into three sections (perspective taking, compassionate care, and putting oneself in the patients' shoes) and rated on a 4-point Likert scale. Age, gender, and the academic year were also gathered.

All questions were followed by a spectrum of options constructed according to the above scale. Age, education, and socioeconomic background were examples of open-ended demographic inquiries. The questionnaire was broken into three main sections: the first was for demographic information, and all of the questions pertained to the characteristics of the respondents. The second part consists of close-ended questions related to the research being conducted. The part consisted of 5 open-ended qualitative questions at the end of each questionnaire.

It is possible to take action to enhance clinical outcomes, lessen physician burnout, and foster a stronger patient-physician relationship in the future by recognising the variables that contribute to the loss of empathy among medical professionals.

RESULTS:

102 respondents participated in this study, including 2(2%) 4th year students, 4(3.9%) final year students, 47(46.1%) House officers and 51(50.0%) Post-graduate trainees.

Among these, 6(5.9%) were students and 96(94.1%) were physicians. 39(38.2%) students were male and 63(61.8%) students were female. There were 24 (23.5%) students belonging to the age group 21-23,67 (65.7%) students of age group 24-26, 3(2.9%) students belonging to age group 30-32 and 7(6.9%) students belonging to age group 27-29. Their mean age was 24.77, and their range was between 21-32 years.

Age, gender, year of study, and current educational standards were found to be significantly correlated with the degradation of empathy in the analysis.

The gender factor significantly impacted the loss of empathy (p=0.024).The majority of females (21) and

males (12) firmly disagreed (p=0.024) that empathy doesn't affect the results of treatment.

Both males and females strongly agreed that it's essential to apply empathy skills in the future medical profession (p=alpha).

Alpha is a type 1 error; hence Null hypothesis Ho is valid, i.e., No relationship exists between gender and empathy application skills in the profession.

Both males and females strongly agreed that it's crucial to apply empathy skills in the future medical profession (p=alpha).

Alpha is a type 1 error; hence Null hypothesis Ho is valid, i.e., No relationship exists between gender and empathy application skills in the profession.

Age and the degeneration of empathy also had a significant link (p=0.0286). In order to give better care, the majority of medical students between the ages of 24 and 26 try to think like their patients (p=.040).

Mainly students of the 24-26 age group (66) and the 21-23 age group considered it worthwhile to teach skills in degree courses in medicine and surgery (p=0.006). Students of all age groups ultimately agreed that it's essential to apply empathy skills in the future medical profession (p=alpha). The null hypothesis is rejected because alpha is a type 1 mistake, even though it is true. (false positive).

Both 4th and 5th-year students consider that empathy doesn't influence medical or surgical treatment (p=alpha). Alpha is a type 1 error; hence null hypothesis is rejected and is trustworthy. (false positive).

Both 4th- and 5th-year students consider empathy important while interviewing and taking history (p=alpha).

Alpha is a type 1 error; hence null hypothesis is rejected and is true. (false positive).

Both 4th-year and 5th-year students try to understand the patient's body language (p=alpha).

Given that alpha is a type 1 error, the null hypothesis is rejected and is therefore true. (False positive).

Both years consider the application of empathy skills to be important in the medical profession (p=alpha). Alpha is a type 1 error, hence the null hypothesis is disproved and the result is true. (False positive).

Both years consider empathy important for regular patient follow-up (p=alpha).

Alpha is a type 1 error, because the null hypothesis is rejected and is true. (False positive).

Current educational standards and the depletion of empathy are significantly related. Among medical students and physicians, most physicians (52) considered inquiring about patients' personal lives important for better clinical outcomes (p=0.034). Among students and physicians, most physicians (22) don't gain empathy from patient relationships (p= 0.031).

Both considered empathy skills application important in future professions (p=alpha). Alpha is a type 1 error; hence null hypothesis is rejected and is true.

(false positive).

Both years feel that their empathy levels changed since 1st year in medical school (p=0.009). Both years think it's important to apply empathy skills in future medical professions (p=alpha).

Alpha is a type 1 error; hence null hypothesis is rejected and is true. (False positive).

The following table shows the factors responsible for the erosion of empathy and their p-values.

Character	Groups	Number of students	Mean ± SD	p-value
Age	21-23	24	1.89±0.647	0.0286
	24-26	67		
	27-29	7		
	30-32	3		
Gender	Male	39	0.62 ± 0.488	0.024
	Female	63		
Year of Study	4th year	2	0.67 ± 0.516	0.048
	5th year	4		
Current Educational parameters	Student	6	0.94 ± 0.236	0.0308
	Physician	96		

H_1: Relationship between age group and erosion of empathy

H_0: No relationship between age group and decline of empathy 0.05

The estimated p-value will fail to reject the null hypothesis if it is larger than 0.05 and will succeed in rejecting it if it is less than 0.05.

Computation:

Chi-Square Tests			
	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	32.541[a]	20	.038
Likelihood Ratio	19.593	20	.484
Linear-by-Linear Association	.188	1	.665
N of Valid Cases	102		

a. The anticipated count for 28 cells (84.8%) is less than 5. The predicted count must be at least.02.

DISCUSSION:

The null hypothesis is disproved since the p-value, which is less than 0.05, is 0.038, indicating there is a connection between the ageing of medical professionals and the decline in empathy.

This study investigated how students and doctors in fourteen distinct areas exhibited empathy: anesthesia, BHU (Sahiwal, Sangla Hill), psychiatry, dermatology, surgery, medicine, emergency, gynecology, ophthalmology, M.Phil., oncology, pediatrics, medical administration, plastic surgery. The study was mainly focused on house officers and postgraduate trainees

According to our study, gender greatly influences empathy, as most females strongly agreed that clinical outcomes and correlation are significantly correlated (p=0.024) with empathy. They firmly agreed (71.6%) that the emotional well-being of their patients and their families was a crucial element of the doctor-patient relationship and (65.7%) that empathy was a crucial therapeutic element in medical care. Most studies revealed that women are more empathic, and as a result, they communicate and comprehend their children better than men.

Women were shown to be more empathic than men in a 2005 study on the relationship between empathy and forgiveness, but there was no discernible gender difference when it came to forgiveness. The relationship between forgiveness and empathy did, however, vary according to gender. In contrast to women, men showed a correlation between empathy and forgiveness.[1]

Since our null hypothesis was rejected, No connection between the study year and empathy levels was identified in our analysis. Yet it is true (false positive) (p=alpha).Despite the results, we believe a positive association exists between empathy and year of study. Empathy levels may increase or decrease with the increase in years. This finding correlates with some

research showing that empathy levels decline with growing years.

According to research conducted in 2014, the first-year students had the greatest empathy score (65.50), and the seventh-year students had the lowest (55.51).[2]

Another study found that after a year of medical school, empathy levels considerably increased.[3]

Our research also showed that empathy levels are affected by age (p=0.0286). Empathy levels may increase or decrease with increasing age.

This is in correlation with some research that shows a decline in empathy levels with age.

According to research conducted in 2014 on students of Bangladesh, mean empathy ratings fall during the first and second years, but gradually increase between the third and fourth years. Despite a decline from the fourth to the fifth year's mean empathy ratings, it was statistically insignificant.[4]

Empathy levels were shown to be positively correlated with present educational standards (p=0.0285). This is in correlation with some research showing that empathy levels decline in postgraduate trainees compared to house jobs. Whereas in other research, the result is contradictory.

According to research conducted comparing clinical and pre-clinical years, empathy levels declined in clinical years.[5]

The degree of empathy is influenced by a number of other variables, including stressors like academic performance, long work hours[7], lack of sleep and the subsequent rise in responsibility with age, distress (such as burnout and depressive symptoms), and well-being (high quality of life).

Our study was hampered by a number of factors. We could only investigate empathy levels in years 4 and 5 because our study was cross-sectional in design. A prospective longitudinal study design will be used to evaluate how empathy evolves over the course of the five years of medical school. Second, the candidate's self-perception affects the decisions they make when filling out the questionnaires, which may be inconsistent with their real behaviour in day-to-day encounters. Thirdly, the only participants in our study were college students in Pakistan who were enrolled in government medical schools. The findings can't be applied to all medical colleges, so more medical schools need to be included in the study, along with a bigger sample size, in order to further corroborate our findings. It's important to keep in mind that a person's cultural background and specialty preferences can also influence how empathic they are; prior research has shown that students who select "people-oriented specialties" have higher empathy levels than students who select "technology-oriented specialties."[6]

CONCLUSION:

This conducted study explored different factors affecting empathy levels in students and physicians. Studies showed that gender greatly influences empathy, since most women were discovered to have higher empathy levels than men. It was shown that the study year had no discernible effect on the level of empathy. Nevertheless, it was clear that ageing reduced empathy. Empathy levels and the current educational standards were found to be negatively correlated, with postgraduate trainees' empathy levels being lower than those of individuals working at

homes. Future studies are required to determine whether empathy levels affect clinical training and patient outcomes, and if so, whether interventions can be created to lessen this effect.

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