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Maintaining empathy in medical school: it is possible

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Abstract

Background: Empathy is an indispensable skill in medicine and is an integral part of 'professionalism'. Yet, there is still increasing concern among medical educators and medical professionals regarding the decline in medical students' empathy during medical education.

Aims: This article aims at comparing the levels of empathy in medical school students across the different years of undergraduate medical education. It also aims at examining differences in empathy in relation to gender, year of study, cultural and religious backgrounds, previous tertiary education and certain programmes within the curriculum.

Method: The Jefferson Scale of Physician Empathy, Student version (JSPE-S) was employed to measure empathy levels in medical students (years one to five) in a cross-sectional study. Attached to the scale was a survey containing questions on demographics, stage of medical education, previous education, and level of completion of particular programmes that aim at promoting personal and professional development (PPD).

Results: Four hundred and four students participated in the study. The scores of the JSPE-S ranged from 34 to 135 with a mean score of 109.07-+14.937. Female medical students had significantly higher empathy scores than male medical students (111 vs. 106, p

Conclusions: Our findings suggest that there is a gender difference in the levels of empathy, favouring female medical students. They also suggest that, despite prior evidence of a decline, empathy may be preserved in medical school by careful student selection and/or personal and professional development courses.

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Background: Empathy is an indispensable skill in medicine and is an integral part of 'professionalism'. Yet, there is still increasing concern among medical educators and medical professionals regarding the decline in medical students' empathy during medical education.

Aims: This paper aims at comparing the levels of empathy in medical school students across the different years of undergraduate medical education. It also aims at examining differences in empathy in relation to gender, year of study, cultural and religious backgrounds, previous tertiary education, and certain programs within the curriculum.

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Results: Four hundred and four students participated in the study. The scores of the JSPE-S ranged from 34 to 135 with a mean score of 109.07 ± 14.937. Female medical students had significantly higher empathy scores than male medical students (111 vs. 106, $p<.001$) across all 5 years of the medical course. There was no significant difference in the total empathy scores in relation to year of medical education. Yet, the highest means were scored by year 5 students who had completed personal and professional development courses.

Conclusions: Our findings suggest that there is a gender difference in the levels of empathy, favouring female medical students. They also suggest that, despite prior evidence of a decline, empathy may be preserved in medical school by careful student selection and/or personal and professional development courses.

Keywords: Empathy; education, medical, undergraduate

INTRODUCTION

In medicine, emotional responses to patients are seen as threats to objectivity. As a consequence, doctors may attempt to detach themselves from their patients to be capable of caring for them reliably, regardless their personal feelings. Yet, patients are in need of genuine empathy and doctors would like to provide it. In order to address this conceived conflict between emotions and objectivity, 'professional empathy' was defined on a purely 'cognitive' basis. It was defined as "the act of correctly acknowledging the emotional state of another without experiencing that state oneself". (Markakis et al., 1999) This model of 'detached concern' assumes that knowing 'how the patient feels' is no different from knowing that the patient is in a certain emotional state. However, the function of empathy is to recognise what it feels like to experience something rather than merely labelling emotional states. (Halpern, 2003) Empathy is sometimes confused with 'sympathy' which is defined as *experiencing* another's emotions whereas; empathy is *appreciating* or *imagining* those emotions. Some authors indicate that doctors who sympathise with their patients share their suffering which could lead to emotional fatigue and lack of objectivity. (Halpern, 2003) Others imply that the emotional component of empathy is nothing other than sympathy in context. (Lancaster et al., 2002) In the clinical context, Stepien and Baernstein (Stepien and Baernstein 2006) combined the different definitions within the literature to put forward an expanded definition of empathy which include; moral, emotive, cognitive and behavioural dimensions. All four dimensions should work in harmony to benefit the patient.

The Power of Empathy

Empathy skills may be the clinician's most powerful tool. A successful medical interview involves successful collaboration between the patient and the doctor. Thus, understanding the feelings, attitudes and experiences of the patient is probably the first step toward a potent and effective interview and, by extension, therapeutic agreement. There is growing evidence that emotionally engaged physicians communicate more effectively with patients thereby decreasing patient anxiety and improving patient coping, leading to greater therapeutic efficacy and an overall better outcome. (Beck et al., 2002, Rietveld and Prins, 1998). On the other hand, lack of empathy increases patient dissatisfaction and the risk of malpractice suits. (Beckman and Frankel, 2003)

Halpern (Halpern, 2007) sheds light on the importance of empathy in difficult circumstances. She gives two examples of situations going horribly wrong due to lack of empathy and hence, lack of communication between the doctor and the patient or the patient's family. In managing difficult patients and in situations where there is a patient-physician conflict, it is recommended taking a conflict resolution approach. To do so, physicians have to empathize with patients and family members. (Back and Arnold, 2005, Elder et al., 2006, Fetters et al., 2001, Stivers, 2005) As stated by Egener (Egener, 2003), empathy helps us bridge the divide between clinicians and patients. It also helps us put aside our negative judgement or disagreement with patients and enhances the effectiveness of care and patient satisfaction. Halpern (Halpern, 2003) elegantly illustrates ways by which physicians can capitalise on their emotional responses to enhance medical care.

Despite all this, many physicians still do not see the emotional needs of patients as a central part of illness and care. The 'skeptic' may even ask if physicians can 'just behave empathically' without the emotional response. Halpern (Halpern, 2003) answers this question by emphasizing that patients sense whether physicians are "emotionally attuned" and that patients trust "emotionally attuned" physicians and adhere better to their treatment. She also highlights that "empathic attunement" guides physicians about when to ask questions and when to stay silent, which leads to better communication and results in the patient disclosing important information.

Empathy is an indispensable skill in medicine and is an integral part of 'professionalism'. It is fundamental for medical schools to educate students on the importance of empathy. Despite rigorous research, there is still increasing concern among medical educators and medical professionals regarding the decline in medical students' empathy during medical education. (Bellini et al., 2002, Chen et al., 2007, Hojat et al., 2004, Newton et al., 2008, Sherman and Cramer, 2005) Some studies suggest that the decline is mostly pronounced in the later years while others suggest that it occurs in the early years of medical education. (Austin et al., 2007; Hojat et al., 2009) Varying designs, employing varying instruments, have been used. Cross-sectional and longitudinal studies were applied. The general consensus was that empathy declines during medical education. Only recently have studies started questioning whether such a decline is of significant magnitude or "greatly exaggerated". (Colliver et al., 2010)

While many studies have shown decreasing empathic behaviour of medical students, few have considered the impact of the curriculum and very few have offered solutions, particularly feasible solutions. (Feudtner et al., 1994; Wear, 2008; Krupat et al., 2009; Phillips 2009; Wear and Skillicorn 2009)

In response, we concerned ourselves with investigating empathy across the entirety of our medical school students, while controlling for effects of age, gender, marital status, religious belief, cultural background, year of study (cohort), previous education and specific personal and professional development programs, in an attempt to identify their effect on the levels of empathy.

The aim of this study was to compare levels of empathy in University of Western Sydney (UWS) Medical School students across the different years of undergraduate medical education, taking into consideration that all medical students went through the same rigorous selection process and, thereby, should have comparable characteristics. Additionally, another aim was to examine differences in empathy in relation to gender, year of study, cultural and religious backgrounds, previous education, and certain programs within the curriculum.

METHODS

This is a cross-sectional study of all medical students enrolled at the University of Western Sydney's School of Medicine (UWS SoM) during the academic year 2011. The study was approved by the University's Human Research Ethics Committee (HREC) and by the Sydney South West Area Health Service (SSWAHS) Human Research Ethics Committee in the Concord Repatriation General Hospital (CRGH). The curriculum at the UWS SoM consists of a 5-year undergraduate program with 2 years of pre-clinical study with limited patient contact followed by 3 years of clinical rotations.

Participants:

Participation in the study was voluntary and anonymous. All medical students enrolled in first through fifth year in 2011 were eligible to participate in the study. The instrument used (a self-assessment survey) was distributed to medical students between April and June 2011. First and second year students were surveyed in April (towards the beginning of the academic year) during problem-based

learning (PBL) classes where attendance was mandatory. Third through fifth year students were surveyed during conference weeks in May and June (towards the middle of the academic year) where attendance was recommended but not mandatory.

Instrument:

The research instrument consisted of a survey containing questions on demographics, stage of medical education, previous education, and level of completion of particular programs that aim at promoting personal and professional development (PPD) and an empathy scale. The scale employed to measure empathy among medical students was the Jefferson Scale of Physician Empathy, Student version (JSPE-S). (Hojat et al., 2003) The JSPE-S is a 20-item psychometrically validated instrument. Respondents indicate their level of agreement to each item on a 7-point Likert Scale (1=strongly disagree, 7=strongly agree). The JSPE-S total score ranges from 20 to 140 with higher values indicating a higher degree of empathy.

Students who failed to return the survey were considered as non-responders. Also, surveys with more than 2 missing responses to the items of the scale were discarded. For those with 1 or 2 missing responses, the mean score to their present responses was used to replace the missing ones.

The JSPE was chosen because it was designed specifically to investigate the development of physician/medical student empathy, as well as its variation and its correlates in different stages of medical education and among different groups of medical students and physicians. (Hojat et al., 2003) It has been tested for validity (face, content, predictive, concurrent and construct) and reliability and has been modified to improve clarity. Another advantage to the JSPE is the balance between positively and negatively worded items (10 each). The use of positively and negatively worded items is a method usually used in psychology tests to decrease the confounding 'acquiescent response style' e.g. a tendency to constantly agree or disagree with statements. (Hojat et al., 2003; Ray, 1979)

Socio-demographic characteristics included age, gender, marital status, religion, cultural background, and year in the medical course. Missing values were common in this section, especially in relation to age, religion and culture and could not be traced back to the participants due to the anonymity of the study. We predicted missing values for religion and culture for we made it explicit that this section

was completely voluntary, yet, it was surprising to have numerous missing values in relation to age. This may be due to the item being the first in the survey, following a paragraph of instructions. As a result of the unavailability of complete data, the number of observations varied for the different variables.

Statistical Analyses

All computations were done using the IBM SPSS Statistical Software version 20. Non-parametric tests were used in all analyses due to the absence of normality in the distribution of empathy levels amongst medical students participating in the study. Tests included the Kruskal-Wallis and Mann-Whitney Tests.

RESULTS

Response rates:

The overall response rate comprises 69.78% (n=404) of the total number of students (n=579) at the School of Medicine, University of Western Sydney in 2011. The response rates for years 1 to 5 were; 74.38%, 73.19%, 82.3%, 30.77% and 86.0% respectively. The response rate for year 4 students was, comparatively, lower because of the use of a different mode of delivery of the test. We were able to allocate a session for years 1, 2, 3 and 5 to finish and return the surveys whereas; we could not allocate one for the fourth cohort. So, we distributed the questionnaire and waited for the students to return them. Naturally, we did not obtain the same response rate. This may indicate that the results for this group may not be an accurate representation of the entire fourth cohort.

Socio-demographic characteristics:

The total number of students participating in the study was 407 students. Three students had left out more than two items and, therefore, their surveys were discarded. Of the 404 respondents there were; 229 (56.7%) women and 175 (43.3%) men. The age of the students ranged from 17 to 44 years with a mean of 20.87 ± 3.08 years. Only 213 and 106 students responded to items related to PPD programs

i.e. Medicine in Context (MIC) and Ethics respectively. 139 (34.4%) had completed MIC while 93 (23%) had completed Ethics.

The cultural diversity was eminent in the students' population. The response rate to this variable and religion were 68.3% and 79.5% respectively.

Descriptive characteristics of the scale:

The scores for the entire sample ranged from 34 to 135 with a mean score of 109.07 ± 14.937. The score distribution for the entire sample showed a ***non-parametric*** pattern with skewness towards the upper end of the scale.

Group comparisons of the Jefferson Scale of Physician Empathy Scores:

Taking into account the fact that only 191 (47%) students responded to the item, *age* seemed to have no effect on the empathy score and was not found significant by the Kruskal Wallis Test (p=.39). *(Table 1)*

When looking at the differences in JSPE-S scores by gender, female medical students were found to have significantly higher empathy scores than male medical students (111 vs. 106, p<.001) in total and across all 5 years of undergraduate medical education. *(Figure 1)* Female students not only scored higher in the total JSPE-S score, but also in 11 out of the 20 individual items of the scale (p<.05). *(Table 2)*

Items, in which significant differences were highest in favour of female students, were:

- "I do not enjoy reading non-medical literature or the art" *(reverse scoring)*
- "I Believe that emotion has no place in the treatment of medical illness" *(reverse scoring)*
- "Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members" *(reverse scoring)*
- "I believe that empathy is an important therapeutic factor in medical treatment"
- "Empathy is therapeutic skill without which the physician's success is limited"

Table 1 shows that there were no associations noted between the levels of empathy and previous tertiary education, cultural background or religious belief. In regards to marital status, empathy scores were significantly higher in single parents, however, the number is too small to consider accurate (n=2). Surprisingly, there was no significant difference in the total empathy scores in relation to year of medical education nor was there a significant difference between students who had completed PPD, and those who had not. Yet, it is worthwhile mentioning that the highest means were scored by year 5 students and those who had completed PPD.

DISCUSSION

The highest score observed in the JSPE-S was for the item; "Patients feel better when their physicians understand their feelings". This is similar to the findings in the Brazilian study, by Paro *et al.* (Paro et al., 2012), which was conducted on 299 fifth and sixth year medical students. It is a good indication of how students perceive the importance of patients' feelings–a marker for compassionate care. (Hojat et al., 2002c)

Empathy and Gender:

According to our findings, female medical students scored significantly higher on the JSPE-S than male medical students. These gender differences occurred at all stages of undergraduate medical education (i.e. years 1 to 5). Differences of mean scores between female and male students ranged from 4 (in years 2 and 3) to 12 (in year 4). While a few studies failed to demonstrate higher empathy scores among female students, reportedly due to sampling bias (Paro et al., 2012, Rahimi-Madiseh et al., 2010, Roh et al., Di Lillo et al., 2009), our findings are consistent with the results of a number of studies which suggest that gender differences, in favour of women, exist concerning empathy. (Austin et al., 2007, Hojat et al., 2003, Hojat et al., 2002a, Hojat et al., 2002b, Hojat et al., 2002c, Hojat et al., 2001, Kataoka et al., 2009, Rosenthal et al., 2011)

Significant differences were found not only in the total JSPE score but also in eleven out of the twenty individual components of the scale. The largest gender difference was observed in the item related to

reading interest; "I do not enjoy reading non-medical literature or the arts" (where, Z=−4.871, p = .000), which coincides with the findings of Kataoka *et al.* (Kataoka, et al., 2009)

Empathy encompasses cognitive and affective/emotional dimensions. The cognitive dimension refers to "the ability to *understand* the patient's inner experiences and perspective, and a capability to communicate this understanding" (Hojat et al., 2003) whereas the affective dimension refers to the ability to *imagine* the patient's emotions and perspectives. (Stepien and Baernstein, 2006) Significant gender differences, in favour of women, were particularly observed in JSPE items which measured the affective component of empathy (7 out of 11). On the other hand, items which showed no significant differences between genders were predominantly cognitive in nature, i.e. items which measured the cognitive component of empathy (6 out of 9).

Several explanations have been offered for gender differences in empathy, but, none have been conclusive. It has been suggested that women are more receptive to emotional signals than men, which can lead to better understanding and, therefore, a better empathic relationship. (Hojat et al., 2002a) Recent research has shown a correlation between right hemisphere activation on the face task and empathy in women only (p = .037), suggesting a possible neural basis for gender differences in empathy. (Rueckert and Naybar, 2008) Mestre *et al.* (Mestre et al., 2009) followed the empathy levels in male and female adolescents, aged 13 to 16 years, in a longitudinal study. They concluded that females had a greater empathic response than males of the same age and that the differences grow with age. Significant differences existed in terms of emotional empathy as well as their cognitive capacity to understand experiences and emotions.

Current research is, also, focussing on identifying interactions between personal and contextual factors, in particular parenting styles. Parenting styles characterised by affection and emotional support seem to enhance pro-social development and empathy. On the other hand, rigid and hostile parenting facilitates aggression. Carlo *et al.* (Carlo et al., 1999) analysed parenting styles in relation to gender and reported that girls seem more receptive to affection and support in family relationships.

Empathy and year of medical education:

The results of this study showed no significant difference in empathy scores in relation to year of medical course. This finding is contrary to many previous studies which observed a decline in the mean empathy scores, during education, in a variety of health disciplines. (Chen et al., 2007, Hojat et al., 2009, Ward et al., 2012, Nunes et al., 2011) Although insignificant, it seems that students may have even developed *more* empathy as they progressed in their training. A cross-sectional study, by Kataoka *et al.* (Kataoka et al., 2012), showed similar findings in Japanese medical students. It showed that the mean empathy scores significantly increased from 98.5 in the first year to 107.8 in the final year of medical school. In our research, the mean empathy scores did increase from 108 to 111, but this increase was statistically insignificant. Another study reported that affective empathy declined in male students while cognitive empathy was unchanged during medical education. (Quince et al., 2011) Our research shows that empathy, both cognitive and affective, did not change among male students in relation to medical education, whereas, affective empathy increased in female students. It is unclear whether this is an effect of the medical education process or merely a natural development with age.

An interesting observation is that, although the score for item 7 i.e. "Attention to patients' emotions is not important in history taking" significantly increases in female students with medical education, the mean score seems to drop after year 3 i.e. during the clinical component of the course. Quince *et al.* (Quince et al., 2011), using the Interpersonal Reactivity Index (IRI), showed a similar finding but in male students.

Empathy and Personal and Professional Development (PPD):

The number of students who responded to the items related to PPD was too small to be reflective of the total population. Also, there was no significant difference between the scores of those who had completed PPD and those who had not. Nevertheless, the highest means were recorded by students who had completed PPD. This finding indicates that we cannot disregard the effect of PPD programs on the levels of students' empathy and that further studies, representing the total population and compared to a control group, need to be implemented. Many studies have reported a quantitative

increase in student empathy following PPD interventions such as; communication skill and interpersonal skill workshops, literature and medicine, patient shadowing and spirituality and wellness courses. Such studies suggest that focused educational interventions may be successful at nurturing undergraduate medical students' empathy. (Evans et al., 1989, Henry-Tillman et al., 2002, Shapiro et al., 2004, Feighny et al., 1995, Hull et al., 2001)

Possible limitations

The survey was conducted at a single medical school (UWS). This limits the generalization of our findings, even though the aim was to identify effective strategies to enhance empathy in undergraduate medical education. Also, findings are based on cross-sectional design and the possibility of cohort effects cannot be dismissed in our study. A longitudinal study is recommended to verify the findings.

We employed a self-reporting scale of empathy and, although scales were reported to be well correlated with observer ratings, there is a possibility that discrepancies between self-report and actual behaviour may exist and that self-reports may have been subjected to biases. The low rate of respondents reporting their age and level of completion of certain PPD programs may have limited our conclusion regarding the effect of age and personal and professional development courses on empathy. Lastly, the lack of clinical exposure of first and second year medical students may have impacted on how the JSPE was completed.

CONCLUSION

Empathy is a key concept in the doctor-patient relationship. Empathic engagement is important for the doctor, in terms of patient trust and hence obtaining a thorough history, and for the physical, mental and social well-being of the patient. Our findings suggest that there is a gender difference in the levels of empathy, favouring female medical students. They also suggest that empathy may be preserved in medical school despite prior evidence of a decline. Any changes observed in affective or cognitive empathy, amongst UWS medical students, were small and of restricted significance. This may be due

to careful student selection and/or personal and professional development courses, within the program, which may have attenuated the decline.

Table 1. Comparison of Jefferson Scale of Physician Empathy scores in relation to age, marital status, cultural background, religious belief, year of medical education, previous degree and level of completion of different PPD programs

	Number (n)	Test		df	Asymp. Sig. (2-tailed)
Gender	404	Mann-Whitney U	14923.500	-	.000**
Age	191	Chi-Square	20.967	13	.074
Marital Status	403	Chi-Square	10.825	4	.029*
Culture	276	Chi-Square	13.557	7	.060
Religion	321	Chi-Square	4.810	2	.090
Cohort	404	Chi-Square	8.402	4	.078
Previous Degree	404	Chi-Square	1.715	2	.424
Medicine in Context (MIC)	213	Chi-Square	4.518	2	.104
Ethics	106	Chi-Square	0.056	1	.813

Grouping Variable: JSPE Score

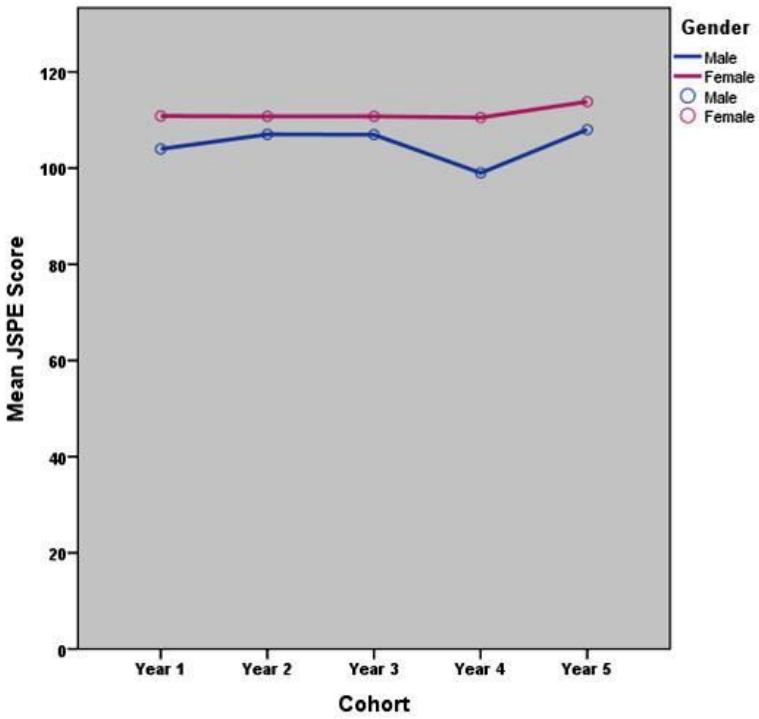
MIC and Ethics are Personal and Professional Development (PPD) programs

Table 2. Comparison of the different components of the Jefferson Scale of Physician Empathy in relation to gender

Item	Mean JSPE Score in medical students		Asymp. Sig. (2-tailed)
	Male students	Female students	
Physicians' understanding of their patients' feelings and the feelings of their patients' families does not influence medical or surgical treatment	5.41	5.61	.026*
It is difficult for a physician to view things from patients' perspectives	4.61	4.65	.85
Because people are different, it is difficult to see things from patients' perspectives	4.30	4.75	.004**
Attention to patients' emotions is not important in history taking	6.05	6.16	.048*
Attentiveness to patients' personal experiences does not influence treatment outcomes	5.47	5.92	.001**
Patients' illnesses can be cured only by medical or surgical treatment; therefore, physicians' emotional ties with their patients do not have a significant influence in medical or surgical treatment	5.75	5.97	.14
Asking patients about what is happening in their personal lives is not helpful in understanding their physical complaints	5.69	5.94	.014*
I believe that emotion has no place in the treatment of medical illness	5.99	6.37	.000**
Physicians should try to think like their patients in order to render better care	2.99	3.03	.767
Physicians should not allow themselves to be influenced by strong personal bonds between their patients and their family members	3.09	3.70	.000**
I do not enjoy reading non-medical literature or the arts	5.58	6.23	.000**
Patients feel better when their physicians understand their feelings	6.22	6.39	.138
Understanding body language is as important as verbal communication in doctor–patient relationships	5.90	6.11	.065
A physician's sense of humour contributes to a better clinical outcome	5.07	4.84	.055
Physicians should try to stand in their patients' shoes when providing care to them	5.59	5.81	.052
Patients value a physician's understanding of their feelings which is therapeutic in its own right	5.71	5.87	.437
Physicians should try to understand what is going on in their patients' minds by paying attention to their non-verbal cues and body language	5.79	5.93	.184
Empathy is a therapeutic skill without which the physician's success is limited	5.29	5.78	.000**
Physicians' understanding of the emotional status of their patients, as well as that of their families is one important component of the physician-patient relationship	5.84	6.10	.025*
I believe that empathy is an important therapeutic factor in medical treatment	5.83	6.20	.000**
JSE total Score	106.15	111.30	.000**

Mann-Whitney Test
Grouping Variable: Gender
* Significant at p<.05
** Significant at p<.01

<u>Figure 1.</u> Line Graph showing the means of the Jefferson Scale of Physician Empathy in relation to gender among the different cohorts of undergraduate medical education



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Iman Hegazi is a lecturer in medical education and a PhD candidate at the University of Western Sydney's School of Medicine. She is a medical graduate and is undergoing a PhD in Medical Education. She constructed the design of the study, collected analysed and interpreted data and drafted the article.

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Declaration of interest

The authors report no declarations of interest

Ethical approval

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Practice Points:

- Empathy skills may be the clinician's most powerful tool
- Female medical students scored significantly higher on the JSPE-S than male medical students
- Significant gender differences, in favour of women, were particularly observed in items measuring the affective component of empathy
- Empathy may be preserved in medical school despite prior evidence of a decline
- Careful student selection and personal and professional development may attenuate empathy decline during medical education