EMPATHY IN INDIAN MEDICAL STUDENTS: INFLUENCE OF GENDER AND LEVEL OF MEDICAL EDUCATION ON EMPATHY SCORES

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ABSTRACT

The aim of the study was to assess differences in empathy scores between male and female students and at different years of medical education. The student version of the JSPE was administered to a total of 366 medical students who are pursuing first year, final year, internship and postgraduation in Dr Pinnamaneni Siddhartha Institute of medical sciences and research foundation. Empathy score differences by year of medical school were examined by analysis of variance (ANOVA), empathy scores for men and women were compared by using Z test. There is no significant difference in empathy scores among medical students at different undergraduate years and postgraduate level. Women have significantly higher mean empathy score than men. Our study found neither a decline nor improvement in empathy scores as medical students progressed through medical education. Women scored significantly more than men. There is a need to validate our findings through following same cohort on longitudinal study design. Low mean score also indicated cultural impact highlighting the importance of a culturally sensitive tool.

Keywords: Empathy; Medical Education; Male Doctors; Female Doctors.

INTRODUCTION

Empathy, defined as the capacity to share and understand emotional states of others in reference to oneself, plays a critical role in human interpersonal engagement and social interaction¹. Empathy is an emotional response that stems from another's state and that is congruent with the other's emotional state.¹ In the context of doctor-patient relation empathy was defined as “a predominantly cognitive (rather than emotional) attribute that involves an understanding (rather than feeling) of experiences, concerns and perspectives of the patient, combined with a capacity to communicate this understanding”²,³. Of late, there is a growing concern and debate happening all over the globe about the aspect of empathy and its role in a shaping a good therapeutic alliance between the physician and the patient. Numerous studies indicate that empathy has a pivotal role in physician-patient relationship wherein high physician empathy levels lead to higher physician-patient satisfaction, better patient compliance to treatment, higher physician well-being, lower burnout, and lower malpractice litigation as compared to physicians with low empathy⁴,⁵,⁶. Studies also report that women have higher empathy than men⁷,⁸.

Medical educators have viewed with concern recent reports of the adverse impact of medical training on empathy⁹,¹⁰,¹¹. One study from Trinidad and Tobago reported that empathy declined significantly in the first year¹², while another U.S.A study reported a significant decline in the third year of medical training which persisted till graduation¹³. In a cohort study of internal medical residents in the U.S.A, empathy was found to be highest at the beginning of internship but decreased by the end of internship. Further, empathy remained low till the end of residency¹⁴,¹⁵. Challenges of residency training, including long hours of work and sleep deprivation, may have contributed to this reduced empathy levels¹⁶. On the other hand an UK study reported that during the medical course affective empathy of men declined slightly but women’s affective empathy showed no change. There was no change in cognitive empathy during the course. The study concluded that the size of change in empathy, although statistically significant, may not have made the subjects less empathic.⁹ As opposed to the above a Japanese and a Korean study observed a significant decline in cognitive empathy during the course. The study concluded that the size of change in empathy, although statistically significant, may not have made the subjects less empathic.⁹ As opposed to the above a Japanese and a Korean study observed a significant decline in cognitive empathy during the course. The study concluded that the size of change in empathy, although statistically significant, may not have made the subjects less empathic.⁹ As opposed to the above a Japanese and a Korean study observed a significant decline in cognitive empathy during the course. 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scores in medical students during training. In view of the contradictory findings and paucity of Indian studies, the present work was undertaken to explore the empathy level in medical students at different stages of education and also analyze the effect of gender on empathy.

MATERIALS AND METHODS

The study was carried out at Dr. Pinnamaneni Siddhartha Institute of Medical Sciences & Research Foundation (DRPSIMS & RF), Vijayawada. The study was approved by the institutional research ethics committee.

Participants

In this cross-sectional analytical study we included by purposive sampling medical students who were studying in first year and final year of M.B.B.S. degree course, pursuing internship, and postgraduate courses in DRPSIMS&RF.

Tools

1. Socio-Demographic Performa: This was a self prepared semi structured performa especially designed for this study. It contained information about socio-demographic characteristics like age, gender, level of study and speciality.

2. The Jefferson Scale of Physician Empathy (JSPE) was designed to measure empathy specifically in medical students and physicians in the context of patient care. The scale was originally developed by the researchers at the centre for research in medical education and health care at Jefferson Medical College, Philadelphia. We have used the revised JSPE (S) student version, for our assessment of empathy among our medical students. We have obtained prior permission from the authorities of Jefferson to use the scale to measure empathy our medical students. The scale was constructed on the basis of an extensive review of the literature, followed by the pilot studies with groups of practising physicians, medical students and residents. The revised version contains self reporting questionnaire having 20 Likert type items on a 7 point scale (1= strongly disagree 7= strongly agree). The higher scores are interpreted as more empathetic behaviour. Several studies have supported the validity (construct, divergent, Convergent, criterion related) and reliability (Cronbach coefficient alpha, test–retest) of the JSPE among medical students and physicians. Previous studies showed that scores of the JSPE were significantly correlated with ratings of clinical competence in the third year of medical school and with the ratings of empathic behaviour given by directors of postgraduate training programs. The scale has also been translated into 25 languages and used by researchers in many different countries.

Procedure

After obtaining permission from the principal of the Medical College for conducting the study, the students were explained about the study project and participants were assured of the confidentiality of their responses and the voluntary nature of their participation. Those who agreed for the study and gave written informed consent were included and the data was collected in leisure periods. The students were instructed not to write their names to maintain confidentiality. The socio-demographic details were collected in self-prepared semi structured performa. The JSPE-S version was distributed to the first, final year students during their regular classes. For the students who are doing Internship and post graduation, the questionnaire was distributed during their clinical rotations in respective departments. We had told all the participants that the questionnaire is about empathy and they are assured about strict confidentiality of individual responses.

Statistical analyses

Empathy score differences by year of medical school were being examined by analysis of variance (ANOVA). Empathy scores for men and women are compared by using Z/t- test.

RESULTS

Of the 366 respondents there are 160 male respondents and 206 female respondents. There are 131 in first year, 96 in final year, 62 in internship and 77 in postgraduation. An examination of gender composition of the sample and the total class confirmed that the sample represents the total population with regard to gender. Empathy scores ranged from 47 to 136 with an average mean of 103.29 (103.3) for 366 respondents. (Table 1)

<table>
<thead>
<tr>
<th>Year of Medical School</th>
<th>Male participants (n=160)</th>
<th>Female participants (n=206)</th>
<th>Empathy score Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year participants</td>
<td>40</td>
<td>91</td>
<td>102.52 (14.69)</td>
</tr>
<tr>
<td>(n=131)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Year participants</td>
<td>38</td>
<td>58</td>
<td>103.00 (12.85)</td>
</tr>
<tr>
<td>(n=96)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internship participants</td>
<td>31</td>
<td>31</td>
<td>102.77 (12.12)</td>
</tr>
<tr>
<td>(n=62)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postgraduate participants</td>
<td>51</td>
<td>26</td>
<td>105.68 (14.83)</td>
</tr>
<tr>
<td>(n=77)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Empathy score Mean (SD)</td>
<td>101.54 (15.32)</td>
<td>104.77 (12.44)</td>
<td>103.29 (103.3)</td>
</tr>
</tbody>
</table>
**Gender comparison**
The female respondent has a mean score of 104.77 where they scored about 3 points more than male respondents. Mean and standard deviation for the both groups are shown in table 1. There is statistically significant difference in the male and female empathy scores (t test p value is 0.00002 which is <0.05 or Z test Z value being 4.34 and p value is 0.00001).

**Comparison by level of medical education**
On the ANOVA p value between mean empathy scores of different years of medical education is 0.4230 which is statistically not significant. Hence the difference in empathy scores is different years medical school is not statistically significant.

**DISCUSSION**
A major finding of our study was that the mean score for the women is significantly more than the men. This finding is in agreement with many studies from USA, UK, Japan and Portugal. In an Italian study also women obtained higher empathy scores but it was not statistically significantly higher than the scores obtained by male doctors. This finding of our study supports the view that women are more receptive to emotional feelings. Intrinsic factors like evolutionary biological characteristics and extrinsic factors like role expectation of women by the society, interpersonal communication style in caring are implicated by the researchers to the high score of women consistently in most of the empathy studies in the world. Another important finding of our study was that there was no significant decline of empathy scores during medical education. This finding is not in agreement with few studies from USA and Trinidad & Tobago that observed a decline in self-reported measures of empathy of undergraduate students throughout undergraduate medical and post-graduate training. Based on these findings it was suggested that the reduction in empathy occurred due to student difficulties in dealing with stressors in medical education, and poor role modelling in the academic and clinical workplaces. Our findings are also not in agreement with findings from Portugal, Japan & Korea that medical education enhances empathy and during intake no emphasis is placed on all round development of an aspirant before entry into medical school, it may also explain disparity in scores. Moreover heavy competition in entrance examinations makes little room for development of professional skills which rely on communicational skills development before entry into medical school.

The empathy scores that we observed in different level of medical education has also, unlike what was observed by most of the American researchers, not declined and shows a little increase (not significant) going through from first year to post graduation. The cross-sectional study design may partially explain the difference. Also when comparing scores of first year to score of post graduate students, a three points increase is observed. This may be due to the fact that first year students have recently come from the more competitive environment which has less focus on development of communication skills. A little dip in score after final year students to interns and two points increase from Interns to postgraduates is observed as Interns face the challenge of getting ready for entrance exam for admission into specialties once they complete internship. It may also be a case that till final year completion, Indian students unlike American counterparts do not face any entrance exam. American medical students face USMLE step 1 exams at the end of the second year before entering clinical clerkships and step 2 at the end of the final year. Therefore the American students are in a severe challenging environment, which can be a cause of decline in empathy scores at third year as being observed by American researchers.

The research done on Japanese medical students at different years of medical education also reported low mean score of empathy in Japanese medical students (Mean score 104.3, SD= 13.1). The same study observed increase in empathy scores while progressing through medical school but unlike our study, statistically significant difference was observed in that study. Probably this could be due to the fact that there are many courses introducing humanities, communicational skills development to the medical students in Japanese medical colleges mentioned by the researcher. However, in the educational system in India there is a dearth of such courses and during intake no emphasis is placed on all round development of an aspirant before entry into medical school, it may also be a case that till final year completion, Indian students unlike American counterparts do not face any entrance exam. American medical students face USMLE step 1 exams at the end of the second year before entering clinical clerkships and step 2 at the end of the final year. Therefore the American students are in a severe challenging environment, which can be a cause of decline in empathy scores at third year as being observed by American researchers.

**Limitations of study**
Our study is a cross sectional study and so does not focus on the long term changes in the same set of students. So following same cohort over the long term will help to validate the study findings. Further the assessment tool was made for western students which may have biased the results.

**CONCLUSION**
Our study found that there is a low mean empathy score in Indian medical students when compared with the western studies. The finding of women scoring higher is consistent with other studies. There is no decline in empathy scores and no statistical difference observed in empathy scores while...
progressing through medical school. These findings do suggest the possibility of cultural impact on the expression of empathy and henceforth more research to be done to collaborate and design culturally sensitive tools to measure and calibrate empathy scores across globe.

REFERENCES


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