Are the first year medicos empathetic?

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Abstract

Background: Empathy is an essentiality among the medical fraternity. Literature indicates better competency, patient compliance and clinical outcomes in relation to higher levels of empathy. Gender differences in empathy level are universal and various factors influence it. So it's quintessential to understand empathy and its correlates among medicos in India. Aims: To evaluate changes in empathy levels of the M.B.B.S students of a renowned medical college in India, during their course in the first year. Materials and methods: A prospective study was carried out among hundred 1st year medical students [M=34, F=66] enrolled at a medical college in Kerala during the academic year 2014 – 2015. Participants completed the Jefferson Scale of Empathy [Student Version]. Results: The mean empathy at the entry & exit points of the study stood at 112 ± 11.39 & 112.07 ± 13.98 respectively. Comparing the male & female population, the females had higher empathy levels. When comparing the empathy levels at the entry & exit points of the male population, significant decline [p value = 0.001] was seen. The female population showed a significant increase [p value = 0.001] in their empathy levels over the same period. Conclusion: There were significant changes in empathy levels of the male & female population, though discernable changes in the whole population were not evident. This study necessitates further follow up of the present students, to analyze the changes occurring over the entire period of medical school.

Keywords: Jefferson scale of empathy, empathy changes, medicos

Introduction

In the context of medical education and patient care, empathy is conceptualized as a cognitive attribute that involves an understanding of patients' pain, experiences, concerns, and perspectives, combined with a capacity to communicate this understanding, and an intention to help. This definition helps differentiate between the often thought to be similar "sympathy" [predominantly an affective response] and empathy [predominantly a cognitive attribute]. The action of understanding, being aware of, being sensitive to & vicariously experiencing the feelings, thoughts and experience of another, of either the past or present without having the feelings, thoughts and experience fully communicated in an objectively explicit manner is Merriam – Webster's definition of empathy. In simple terms empathy is, entering into another's personality and imaginatively experiencing their emotional state; pertinent in "doctor – patient relationship". Evidence suggests, empathetic nature of doctors results in shorter duration of symptoms and reduced stress and anxiety. Fewer complications, improved patients' recall and compliance are other benefits of an empathetic approach towards patients. They attain patient trust which helps unmask symptoms, improve diagnosis and patient adherence to therapy thus ensuring better care. Hence, empathy can rightly be called a cornerstone of medicine.

However, literature universally implies change in empathy levels among medicos during their training years, with predominance of a decline rather than an increase or no change in empathy levels.

Varied measuring scales for empathy like interpersonal reactive index [IRI], the balanced emotional empathy scale [BEES] are existent yet a void persists in the patient-doctor context; more specifically at a medical undergraduate level. Jefferson Scale of Empathy – Student [JSE – S] Version aptly fills this...
lacuna. Moreover, reliability, validity & credibility make JSE the ideal tool among self-reported instruments.

In the light of disparate findings globally, gender disparity in empathy levels & assessment of empathy changes during medical course become weighty issues of discussion. The authors are not aware of many studies conducted in the southern part of India pertaining to empathy levels amongst medicos. A prospective study is needed to follow students annually from the beginning of first year until graduation, to find out an accurate image of change in empathy levels. This longitudinal study was undertaken to measure empathy levels among medicos of the 1st year with an objective to measure changes in empathy over the 1st year & to compare the empathy scores of male and female medicos.

Materials and methods

The study was carried out at Jubilee Mission Medical College and Research Institute, Kerala, India, during the academic year 2014 - 2015. Prior clearance of the institutional research & ethics committee was obtained. A person not associated with the study coded all the printed copies of JSE – S to avoid student identification. All the 100, 1st year medical students enrolled were briefly explained the nature of study, assured confidentiality, written consent taken & were administered printed copies of JSE- S. Kongsved et al enunciated, printed copies generate greater response rates over electronic versions. The scale was completed in about 30 minutes and returned. The procedure was done twice during the academic year. First evaluation was at 1 month after enrollment and denoted as L1. Second evaluation was at 2 months prior to the final exams and denoted as L2. There was an interval of 7 months between L1 and L2.

JSE- S is a psychometrically validated self reporting instrument with 20 items. Of which ten items are reverse-scored. Respondents indicate their level of agreement to each statement on a 7 point Likert scale where 1 being strongly disagree through 7 being strongly agree. Possible score ranges from 20 to 140 & level of empathy is directly proportional to the score. The instrument’s validity and reliability has been well demonstrated. It has been shown to be a superior and valid self-reported predictor of long-term empathy levels. Prior consent regarding utilization and data analysis was procured from the principal author of JSE-S. Only English version of JSE – S was used.

The data collected was tabulated in an excel sheet and statistically analyzed by SPSS 16. Mean, standard deviation, 95% confidence interval, range, mean difference, 95% confidence interval of mean difference and p value were analyzed.

Results

All the 100 [M=34, F=66], 1st year undergraduates were accounted for during the administration of the instrument. The observations are tabulated in Table 1. Both at L1 and L2, females showed more empathy levels than males. However, the lowest individual value was from female population. The lowest empathy level of the cohort sees a plummet from 83 to 75 over the course of the year whereas the highest value has only inched up from 132 to 136.

Discussion

Most authors suggest that a prospective study gives a more accurate image of change in empathy levels. The present study is part of a five-year prospective study with the aim of assessing all 100 students of the academic year 2014 - 2015. Topographically a myriad of the previous studies reported from the West, Europe & Asian continents are cross sectional in nature. From India, the authors are aware of a previous cross sectional study conducted in the northern part of the country. Not many, especially a prospective type, have been reported from the southern part of India. Hence an endeavor in that direction by the authors for a more accurate picture of empathy level changes.

The mean values of this study was similar to values found by Magalhaes, Asma Mostafa & by Chen. The values of our study was higher than Katoaka & Rahimi. Though being part of the Asian continent, empathy levels of this study was found to be higher than those of other Asian countries like Japan & Iran but similar to those of the West & Europe. It is also higher than values obtained from a previous study in India by Shashikumar et al [102.91]. Hong et al attribute
### Table 1: Comparison of results of the first & second evaluations of empathy level assessments of first year medical students, n=100

<table>
<thead>
<tr>
<th>Function</th>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean empathy ± S.D</td>
<td>112 ± 11.399</td>
<td>112.07 ± 13.98</td>
</tr>
<tr>
<td>Mean empathy – female</td>
<td>114.23 ± 9.98</td>
<td>115.79 ± 11.51</td>
</tr>
<tr>
<td>Mean empathy – male</td>
<td>107.68 ± 12.82</td>
<td>104.85 ± 15.62</td>
</tr>
<tr>
<td>Minimum value</td>
<td>83</td>
<td>75</td>
</tr>
<tr>
<td>Maximum value</td>
<td>132</td>
<td>136</td>
</tr>
<tr>
<td>Minimum value - female</td>
<td>83</td>
<td>82</td>
</tr>
<tr>
<td>Maximum value - female</td>
<td>132</td>
<td>136</td>
</tr>
<tr>
<td>Minimum value - male</td>
<td>87</td>
<td>75</td>
</tr>
<tr>
<td>Maximum value - male</td>
<td>127</td>
<td>134</td>
</tr>
<tr>
<td>Difference in means</td>
<td>6.55</td>
<td>10.93</td>
</tr>
<tr>
<td>95% confidence interval of difference in means</td>
<td>1.93 – 11.17</td>
<td>5.47 – 16.40</td>
</tr>
</tbody>
</table>

### Table 2: Changes in empathy levels of students over the first year, L1 – evaluation at 1 month, L2 – evaluation at 2 month before final exam, n=100, * p<0.05

<table>
<thead>
<tr>
<th>Empathy levels</th>
<th>L1 Mean ± S.D</th>
<th>L2 Mean ± S.D</th>
<th>Mean difference in empathy levels</th>
<th>95% Confidence Interval of mean difference</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>112 ± 11.3</td>
<td>112.07 ± 13.9</td>
<td>-0.07</td>
<td>-3.39 to 3.25</td>
<td>0.0967</td>
</tr>
<tr>
<td>Male</td>
<td>107.68 ± 12.8</td>
<td>104.85 ± 15.6</td>
<td>2.823</td>
<td>1.31 to 4.34</td>
<td>0.001*</td>
</tr>
<tr>
<td>Female</td>
<td>114.23 ± 9.9</td>
<td>115.79 ± 11.5</td>
<td>-1.56</td>
<td>-2.16 to -0.96</td>
<td>0.001*</td>
</tr>
</tbody>
</table>

### Table 3: Comparison of gender differences in empathy levels of students in various studies

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Country No. of Students</th>
<th>Type of Study</th>
<th>Mean Empathy mean</th>
<th>Male Empathy mean</th>
<th>Female Empathy mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chen et al¹⁹</td>
<td>2007</td>
<td>USA 172</td>
<td>Cross sectional</td>
<td>115.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chen et al¹⁹</td>
<td>2007</td>
<td>USA 138</td>
<td>Cross sectional</td>
<td>118.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kataoka et al²⁰</td>
<td>2009</td>
<td>Japan 400</td>
<td>Cross sectional</td>
<td>104.3 ± 13.1</td>
<td>103.7</td>
<td>107.0</td>
<td>0.02</td>
</tr>
<tr>
<td>Rahimi et al²²</td>
<td>2010</td>
<td>Iran 181</td>
<td>Cross sectional</td>
<td>105.1 ± 12.9</td>
<td>103.7</td>
<td>105.6</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Magalhães et al³⁰</td>
<td>2011</td>
<td>Portugal 356</td>
<td>Cross sectional</td>
<td>110.3 ± 10.6</td>
<td>110.32</td>
<td>112.86</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Shashikumar et al³⁰</td>
<td>2014</td>
<td>India 488</td>
<td>Cross sectional</td>
<td>102.91</td>
<td>101.89</td>
<td>106.50</td>
<td>0.012</td>
</tr>
<tr>
<td>Asma et al³⁰</td>
<td>2014</td>
<td>Bangladesh 98</td>
<td>Cross sectional</td>
<td>109.77 ± 15.29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present study</td>
<td>2015</td>
<td>India 100</td>
<td>Longitudinal (L1)</td>
<td>112 ± 11.3</td>
<td>107.67</td>
<td>114.22</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Present study 2015

Longitudinal (L2) 112.07 ± 13.8

104.85 ± 15.62

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differences in empathy levels between Western and
Asian students to cultural differences. Katoaka et al
opines difference in cultures & entrance methods into
medical schools may account for global variation in
empathy. That the Japanese prefer their doctors to be
calm and unemotional; an observation by Katoaka et al
could shine light on why values of the present study are
higher than that of the Japanese study. The Malaysians
on the other hand are quite happy that their doctors adopt
a paternalistic role & prefer they adorn the “family
counselors” hat, advising them on a range of issues,
often unrelated to their illness. Significant curriculum
differences also contribute to this variation. In India,
clinical exposure is from the commencement of second
year in contrast to the medical curriculum from several
countries. In spite of exposure to humanities subjects
like economy, literature & philosophy as found in Japan
& USA, their mean empathy levels stood lower than
this study. Neumann et al opines burnout, reduced
quality of life, declining idealism & enthusiasm since
course commencement and reduced family contact,
factorial for declining empathy.

Our study ascertains, female medicos have higher
mean empathy levels than their male counterparts;
consistent with several international studies. This
characteristic was observed both times when the
study was conducted during the academic year.
Significant gender difference in empathy levels was
observed twice during the study, in contrast to a number
of previous studies.

The values as indicated in Table 1 also illuminate a
slight increase in empathy levels of the female students
towards the end of 1st year, which is a good sign in the
right direction. Females by nature are more caring,
loving, giving, and emotionally supportive and the fact
that they conform to societal norms & tend to handle
pressures of life with more clarity could justify higher
empathy status. However, these aspects have not been
pondered in this study and require further investigation.

Decline in empathy levels of male medicos in this
study is of concern warranting investigation &
 systematic intervention. The authors believe that this
could partly be due to the following. Cultural norms
discourage people from showing empathy. Some adults
say “growing up”, especially for boys, equals “getting
tough.” This generally means that they need to act tough
and resist the urge to show or respond to emotions. Peer
pressure is another factor. It’s commonly seen that boys,
bond by teasing and joking with their peers. So a boy
who makes the effort to ask the new kid if he is coping
well, instead of making fun of him along with the
crowd, runs a huge social risk. Therefore, theoretically
even if they want to empathize, it may be practically
difficult for them, especially in-group situations. The
decline in empathy among the male cohort could also be
due to hormonal differences. This may be associated
with a desire for dominance and power over others.
Therefore, this desire may often conflict with the ability
to show empathy towards others.

A long term prospective study of the above students
during their entire M.B.B.S course is planned, to assess
changes in empathy levels. If changes are evident, what
factors antecedent these changes are to be checked and
interventional steps have to be taken to maintain
optimal levels of empathy. Unlike previous cross
sectional studies, the present one is part of a prospective
study. Education on empathy would not be futile as
students are more amenable to change. Therefore it
would benefit students and the society at large if
education on empathy is included in the medical
curriculum. Whether this nurtures long term empathy is
a critical question requiring prolonged follow-up.

Limitations of the study: The sample size is small
when compared to previous cross sectional studies that
could have probably affected the outcome of the study.
Findings from a single tertiary institution limit scope of
generalization of empathy levels among medicos across
the country. Self-reported instruments have inherent
respondent bias that may not reflect actuality in clinical
practice.

Conclusion

Empathy levels of male medicos showed a
significant decline and that of the female medicos
showed a significant increase. Female students showed
more empathy levels. There was no significant change in empathy levels at the beginning and end of first year.

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References


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