

## Original Research Article

# Emotional intelligence of medical undergraduates: a cross sectional study

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## ABSTRACT

**Background:** Emotional intelligence (EI) is defined as the ability to perceive, access and generate emotions. This in turn will assist thoughts to understand emotions and emotional meanings and thus reflectively regulate emotions so as to promote both better emotional and intellectual growth. EI is essential for a competent physician. The present study was conducted to know the EI of medical students.

**Methods:** A cross sectional study was conducted at Government Medical College Nagpur among final year part 1 medical undergraduates. Data was collected with the help of pre tested, predesigned, self-administered proforma based on the “quick emotional intelligence self-assessment questionnaire”. Statistical analysis was done with epi info software and appropriate statistical tests were applied to prove the significance.

**Results:** Of the total 197 study participants, 100 (50.76%) were female students and remaining 97 (49.24%) were male students. Mean score for EI was 102.16 With 95% confidence the population mean is between 99.6 and 105.

**Conclusions:** Emotional intelligence for most of the study participants belonged to ‘consider strengthening’ category indicating good scores. Female medical undergraduates were more emotionally intelligent than male students.

**Keywords:** Emotional intelligence, Medical, Undergraduates

## INTRODUCTION

Emotional intelligence (EI) is defined as the ability to perceive, access and generate emotions. This in turn will assist thoughts to understand emotions and emotional meanings and thus reflectively regulate emotions so as to promote both better emotional and intellectual growth.<sup>1,2</sup> The concept of EI was first described by Salovey and Mayer more than two decades ago.<sup>3,4</sup> Subsequently, they described a four-branched model of EI.<sup>5</sup> The four branches or abilities were perceiving, using, understanding, and managing emotions. These different dimensions of EI are likely to influence the academic and professional success particularly in the field of medicine.<sup>4</sup> There is an urgent need today to inculcate the virtues of

patient-care and self-care in medical professionals. Patients need more than what a purely analytical doctor can offer. Recovery and therapeutic processes for patients could be more effective with a doctor who communicates empathetically, ethically and competently.<sup>2</sup> EI, one of the psycho-affective domains, has been related to improved empathy in medical consultation, doctor-patient relationships, clinical performance and patient satisfaction.<sup>1,6,7</sup>

In recent times we are witnessing several instances of violence against doctors and health care professionals in India and many low and middle income countries.<sup>8,9</sup> The vulnerability of the patients and their relatives, the uncertainty associated with the treatments, overcrowded

hospitals and overworked health care providers contribute to many of these violent episodes.<sup>10</sup> They can also be traced back to lack of emotional intelligence among the physicians and health care professionals, thus aggravating the situation and pushing the frustrated patients and their relatives to violence. Therefore, there is a need to hone emotional intelligence of medical students as a part of medical education in creating sensitive and empathetic physicians for the future.

In this context emotional intelligence is getting the much-needed attention. But currently little data exists on the EI of medical students more so in Indian set up. Hence the present study was conducted with the aim and objectives of assessing the emotional intelligence of final year medical students and to identify its association if any with gender and age.

## METHODS

A cross sectional study was conducted at Government Medical College and Hospital, Nagpur, a tertiary care centre in central India. The study participants for the present study were medical undergraduate students. Universal sampling was done and all final year (7<sup>th</sup> semester) students willing to participate in the study were included. The study was carried out in September 2019.

Ethical clearance was obtained from the Institutional ethics committee (IEC). The study participants were explained about the nature and purpose of the study. Informed consent was obtained from them regarding their voluntary participation in the study. Data collection was done by using a self-administered, pretested questionnaire that was mainly based on the “quick emotional intelligence self-assessment questionnaire” which included 40 questions to know the emotional intelligence and few other questions to obtain data on age and gender.<sup>11</sup> Instructions were given regarding how to fill the questionnaire and doubts if any were cleared regarding the same. The quick emotional intelligence self-assessment test comprises of four domains namely:

- Emotional awareness,
- Emotional management,
- Social emotional awareness and

- Relationship management.<sup>13</sup>

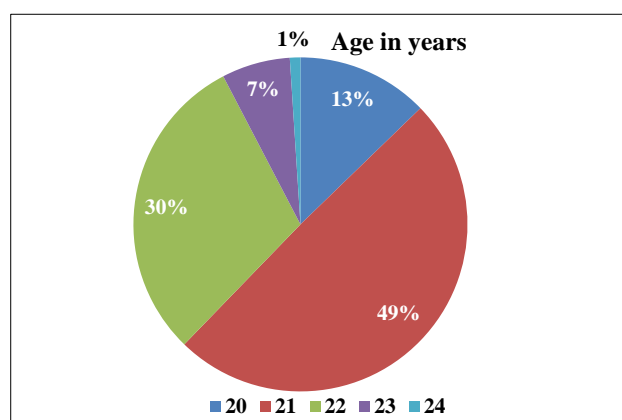
Participants’ response to each item was based on a 5-point frequency type of Likert scale ranging from never to always (0-4). Each domain had 10 questions with a total score of 40 in each domain and thus a maximum possible overall score of 160.

## Statistical analysis

Data was entered in Microsoft excel and analysis was done with the help of epi info software. Percentages and mean were calculated. The relation of EI if any with the factors such as age and gender was determined with the help of appropriate statistical test of significance.

## RESULTS

The number of students in the 7<sup>th</sup> semester was 216. On the day of study, the number of students present for the class was 204. Out of these, 4 did not consent to participate in the survey and in 3 questionnaires were incomplete. Thus, the final sample size was 197 with a response rate of 96.56%. The total number of study participants was 197 of which 100 (50.76%) were female and remaining 97 (49.24%) were male. The mean age of the study participants was 21.32 years with a standard deviation (SD) of 0.84 years. The detailed age distribution is presented in Figure 1.



**Figure 1: Age distribution of study participants.**

**Table 1: Distribution of scores in the four EI domains.**

Emotional intelligence domain	Minimum score	Maximum score	Mean	Standard deviation	95% confidence interval
Emotional awareness (max 40)	9	35	23.94	4.86	23.3 to 24.6
Emotional management (max 40)	8	39	24.56	6.49	23.7 to 25.5
Social emotional awareness (max 40)	6	39	27.75	5.77	26.9 to 28.6
Relationship management (max 40)	3	40	25.91	6.46	25 to 26.8
Total emotional intelligence (max 160)	33	140	102.16	18.38	99.6 to 105

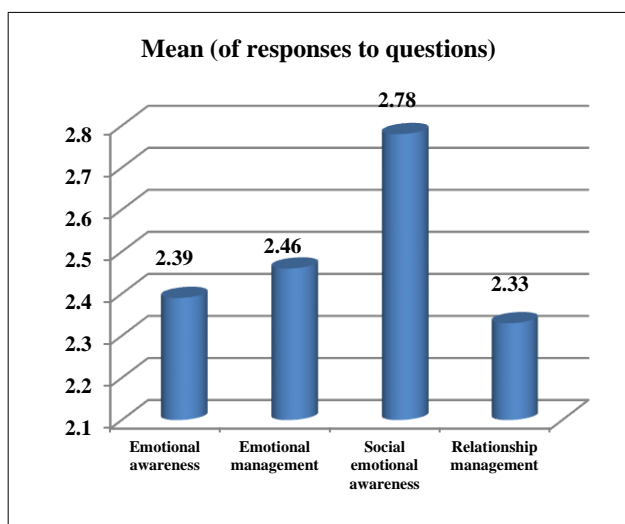
**Table 2: Distribution of study subjects as per the graded scores in each domain.**

Emotional intelligence domain	Scores		
	0-24	25-34	35-40
<b>Emotional awareness (max 40)</b>	110	83	4
<b>Emotional management (max 40)</b>	100	86	11
<b>Social emotional awareness (max 40)</b>	47	129	21
<b>Relationship management (max 40)</b>	86	97	14

Emotional intelligence was calculated with the help of the quick emotional intelligence self-administered questionnaire. There was a wide range of scores of the EI as well as its 4 domains. The details are tabulated in Table 1.

Each domain of EI can be graded based on the scores. These different grades have a distinct significance. Score of 0 to 24 indicate area for enrichment and many opportunities for attention and development are there. Score between 25 to 34 means that effective functioning is present and one can consider strengthening. The score of 35 to 40 are a good sign and signify that those skills are enhanced, are an asset and thus can be used as leverage to develop weaker areas. The distribution according to the classified scores is shown in Table 2.

Each of the domain for EI had 10 questions in the assessment questionnaire, for which the study participants had to mark from 0 to 4 on a Likert scale wherein 0 meant never and 4 meant always. The mean score of the questions domain wise was calculated and is depicted in Figure 2.

**Figure 2: Total mean score domain wise.**

As obvious from the Figure 2, the Social emotional domain appeared to be more developed followed by emotional management, emotional awareness and relationship management in the descending sequence.

The age wise mean values of EI are presented in Table 3. A statistically significant difference was observed for the emotional intelligence in various age- groups.

**Table 3: Age-wise mean EI.**

Age (years)	Mean EI	Standard deviation	95% Confidence interval
<b>20</b>	93.15	17	85.7 to 101
<b>21</b>	105	15	102 to 108
<b>22</b>	99.57	22	92.8 to 106
<b>&gt; 22</b>	104	19	94 to 114

df=3, p=0.046.

Mean EI for female students was 104.08 with a SD of 15.23. The mean EI for male students was 100.28 with a SD of 20.94. When these mean scores of female and male medical undergraduates were compared with t-test, a significantly higher scores of EI were proven ( $t=1.8904$ ,  $p=0.001$ ) in female students.

## DISCUSSION

The present study focused on determining emotional intelligence by self-assessment scale. Although many scales for the same are available quick self-assessment was preferred as it gives an instant answer to what is the participant's EI and also identifies the weaker and stronger domain. Mean value of the total EI score as observed was 102.16. It is similar to a study carried out by Sundararajan et al in Chennai.<sup>12</sup> It was found that the students had emotional intelligence above the average, i.e., 40 being the maximum possible score, around 21 is the average and the participants scored above 20 in almost all the 4 of the domains in the scale. These findings are similar to other studies.<sup>12-14</sup>

For the various domains of emotional intelligence, the first two i.e. emotional awareness and emotional management most of the study participants had a score of 0-24. In case of relationship management more students had scores of 25-34 than 0-24. Whereas for the social emotional awareness majority of the respondents had a score of 25-34 thus making it evident that this domain is better developed. A well-developed social emotional awareness points towards the fact that this emotional area can be well utilized for improving and enhancing the doctor-patient relationship.

The age-wise mean scores of the EI were compared by one-way analysis of variance (ANOVA) test. This was proven to be statistically significant ( $df=3$ ,  $p=0.046$ ). Older age group students with added maturity had a significantly high EI. This finding is similar to the study of Ghada et al.<sup>15</sup> The reason is obvious that with increase in age the individuals learn to tackle the situations better which could also be attributed to a greater experience.

Female students were observed to have a higher EI score than the male students. This was compared by applying t test. A statistically significant difference was observed when EI was compared gender-wise ( $p=0.001$ ) thus proving that female students had higher emotional intelligence. This finding goes along with that of other researchers.<sup>12,15</sup>

## CONCLUSION

Emotional intelligence for most of the study participants belonged to 'consider strengthening' category indicating good scores. Female medical undergraduates were more emotionally intelligent than male students. Social emotional domain appeared to be more developed followed by emotional management.

Creating a professional medical doctor is a dynamic process of imparting not just knowledge and technical skills but also ethics and interpersonal skills. Emotional intelligence abilities are the building blocks that will allow medical college students to build healthy doctor patient relationships in the future. There has been very little focus globally on training medical students in emotional intelligence. Therefore, medical educators must include emotional intelligence testing and training in the syllabus. In addition to being an all-round development the ways to improve and strengthen EI should also be an inbuilt part in medical teaching.

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