ORIGINAL ARTICLE

Emotional Intelligence – The Often-Neglected Quintessential Ingredient for Professional Ethics among Medical Students: A Cross Sectional Study

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ABSTRACT

Background: Emotional Intelligence refers to an individual's capability of understanding and responding appropriately to emotions and application of this understanding to guide their thoughts and actions. The study aimed to assess the level of emotional intelligence and its determinants among medical undergraduates, interns and postgraduate students at a medical institute in Nagpur. **Methods:** A quantitative, questionnaire based cross sectional study was conducted among 384 medical students from a medical college at Nagpur using Quick Emotional Intelligence Self Assessment Test to assess the level of EI and study its association with selected socio-demographic factors. Coded Data was entered in Microsoft excel. Descriptive statistics like percentage, proportion SD were used. Inferential statistics were applied using licensed version of SPSS 27, and p-value less than 0.05 was expressed as statistically significant. **Results:** Among the total 384 study participants, mean age was 24.63 years with a standard deviation of 3.27 years. More than three fourths were females. Above average EI scores were present in 284 (64.5%) of the participants. Higher mean EI scores were observed among the residents (114.54 $\pm$ 21.0) as compared to interns (104.87 $\pm$ 22.6) and undergraduate students (100.11 $\pm$ 22.58) which was statistically significant (f=7.081; p=0.00107). Parental education was significantly associated with higher EI scores whereas, there was no association between age, gender and place of residence with the EI scores. **Conclusions:** level of emotional intelligence among most of the medical students was above average. Higher parental education and advanced academic stage has better EI scores among the medical students.

KEY WORDS: Emotional intelligence, Medical students, Emotions, Determinants, Doctor patient relationship.

Introduction

Emotional intelligence has become a quintessential component of the medical education as the learning of the medical students in the clinical domain relies chiefly on the interpersonal interactions of the students with several entities like the patients, their relatives, hospital staff and also their teachers.[1] Therefore, for effective learning experiences the students, inters as well as the residents from medical institutes have to adept at interpersonal communication skills.[2,3] This entails understanding the emotions of those involved and application of this knowledge in their day-to-day activities.[4] Thus, Emotional intelligence or EI can be defined as the ability to monitor one's own and others' feelings and emotions, to differentiate between them and to use the information to guide ones thinking and actions.[5]

Access this article online

Quick Response Code:

Website: www.jmsh.ac.in

Doi: 10.46347/jmsh.v11.i2.24.8

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The medical profession is dependent on human interactions, hence emotional intelligence is of paramount significance to express and control one's own emotions and at the same time being able to understand, interpret, and respond appropriately to others' emotions.[6] Psychologists consider this ability as emotional intelligence (EI), and now-a-days some experts are of the opinion that EI as reflected by the emotional quotient or EQ is deemed to be significant than the IQ of an individual.[7,8]

Doctor patient relationship heavily relies on empathy and compassion towards their patients and not only does this help in improving the bond between doctors and their patients but also increases compliance towards treatment enhancing better clinical outcomes.[9–11] Emotional intelligence is of paramount significance not only for patient care but also in maintaining good interpersonal relations with other doctors, patient's relatives and the hospital staff facilitating teamwork. With a sharp decline in communication with patients and the rising instances of violence against medical professionals, it has become imperative to inculcate emotional intelligence among the medical students for their all-round development as medical graduates.[2,5]

Additionally, Higher EQ is found to positively correlate with academic success, social skills, better interpersonal relationships and ability to cope with stressful situations, while low EQ has been associated with deviant behavior, alcohol and drug abuse and poor relationships.[12] With the introduction of the CBME (Competency Based Medical Education) curriculum, special emphasis is being laid on improvising communication skills and emotional intelligence of the undergraduate students.[13] There has been a special provision for teaching AETCOM (Attitude, Ethics and communication) skills in their curriculum.[14] This necessitates evaluation and further improvement of the EI of medical students for effectively implementing the AETCOM model.[15] However, EI of the medical students is seldom assessed or paid attention to. In this context, the present quantitative cross-sectional study was designed to assess the level and determinants of Emotional intelligence of medical undergraduates, postgraduates and interns from a tertiary care teaching hospital at Nagpur. The aim of the study was to assess the level of emotional intelligence among the medical undergraduates, interns and postgraduate students in NKP SIMS, Nagpur and to study the association of the various socio-demographic factors with emotional intelligence.

Methodology

The present cross-sectional study was conducted at a tertiary care teaching hospital, the NKP Salve Institute of Medical Sciences & Research Center and Lata Mangeshkar Hospital, Nagpur for a duration of 1.5 years from April 2022 to July 2023. The study participants were undergraduate medical students from the institute including interns and post graduate students.

Inclusion criteria:

Interns, postgraduate students & undergraduate students who were willing to participate in the survey by answering the questionnaires through google forms were included in the study.

Sample size and sampling methods:

On the basis of the study conducted by Sundararajan S et al "Emotional intelligence among medical students: a mixed method study from Chennai, India.[9] Considering the proportion of below average EI score- 50.24%, with 95% CI, & 5% margin of error, the sample size obtained was - **384**. Simple random sampling was done using a random number table to draw the sample of 100 students each from the I, II and III MBBS and remaining 100 students from jointly from the interns and postgraduate students.

The sample size was calculated using the following formula:

$n = Z^2 P(1 - P) / d^2$

Where, n = sample size

Z = Z statistic for level of confidence

P = Expected prevalence or proportion (if proportion in 20% then P = 0.2)

d = precision (if precision is 5% then d=0.05)

Study tool and data collection:

Permission from the institutional ethics committee was obtained before commencement of the study vide Ethics Committee letter number—ECR/88/Inst/MH/2023/RR‑19. Written and informed consent was also obtained from the study participants.

The data on sociodemographic characteristics like age, gender, socio-economic status, of study participants was taken by semi-structured validated questionnaire.

Emotional intelligence was assessed with help of scale – **"Quick Emotional intelligence self-assessment scale"**.[16] The scale has 4 domains. i.e., emotional awareness, emotional management, social emotional awareness and relationship management. Each dimension having score 0-40 (min 0 and max 40). Each domain 10 questions. Each question 0-4 marks on basis of Likert scale. (0- never, 1- rarely, 2 sometimes, 3-often, 4 – always). The Average score was calculated in each domain. Students scored below 50 % of said average categorized as below average EI (13). Students scored above 50% of average score categorized as above average EI (Annexure I – Supplementary file).

Statistical analysis:

After collection of data, it was entered into Microsoft excel. Descriptive statistics i.e., mean and standard deviation were calculated, EI score among the groups were compared using ANOVA and associations were assessed using Fischer's Exact test. The data were analyzed using IBM SPSS Statistics software (Version 27).[17] P value < 0.05 was considered statistically significant.

Results

The demographic characteristics of the study participants have been depicted in Table 1. Out of total 384 study participants, 146 (38.02%) study participants belonged to age group 20-22 years, 163 (42.45%) were from the age group of 23-25 years, 77 (20.05%) were above the age of 25 years. The mean age was 24.63 years with a standard deviation of 3.27 years and ranging from 22 to 28 years. Around one quarter were male participants and rest were females. Most of them were having urban livelihood. Participants having higher parental education i.e., above graduate level were 69% for maternal and 93.48% for paternal education.

Table 2 shows the distribution of study subjects as per their EI scores. Majority of the study participants 248(64.5%) had EI scores falling in the above average (above 50%) category.

Table 3 shows the association of various sociodemographic factors with EI scores. Age, gender and place of residence of the study participants were not found to be significantly associated with emotional intelligence score ($p>0.05$) while parental education was found to be statistically significant with EI score indicating that higher education levels of the parents corelate positively with their child's Emotional Intelligence.

Table 4 shows the category wise distribution of students as per their mean EI scores (mean±S.D). when one-way ANOVA was applied across the three categories namely undergraduate students, postgraduate students and interns, there was a statistically significant difference between the different category of students with the EI scores being highest for the residents or the post graduate students followed closely by interns and least for the undergraduate students ($p< 0.05$).

Discussion

The present study was conducted at a medical institute in Nagpur among 384 study participants who were medical undergraduate, postgraduate students and interns. The study aimed to assess the EI levels of the participants, and the sociodemographic factors associated with their respective EI scores. Majority of the study participants were of the age of 23-25 years with a female preponderance.

The EI scores in the present study were above average among 248 (64.5%) participants. Similar levels of EI were reported by several previous studies.[18–20] However, one of the studies has reported higher EI scores among nearly 90% of their total population that participated in the study and only 10% of them had very low EI scores.[21] In their study, high EI was found to be associated with good physician-patient relationship, compassionate and empathetic patient care, higher knowledge, and leadership quality, ability to work in team and good communication with the patient.[22,23]

There was no statistically significant association of Age, gender and place of residence with EI score. Similar results were found by the study done by Sunderrajan S et al.[9] and by Mathew Tordes et al.[2] Similarly studies done by George P et al[4] and Vadivel K et al.[21] showed that gender did not affect the EI scores. This might be due to the fact that the other traits measured by the Quick Emotional Intelligence Self-Assessment Scale questionnaire were also found to be similar in both genders. Some of the earlier reports have shown that

Table 1: Baseline socio-demographic characteristics of the study population (n=384)

Sr. No	Characteristics	Category	Residents	Interns	Undergraduates
1	Age (years)	20-22 yrs.	0 (00.00%)	0 (00.00%)	146(87.36%)
		23-25 yrs.	33(31.48%)	107(94.92%)	21 (12.64%)
		>25 yrs.	71(68.51)	6(5.08%)	0 (00.00%)
2	Gender	Male	21 (20.37%)	36 (32.20%)	40 (24.13%)
		Female	83 (79.63%)	77 (67.8%)	127 (75.87%)
3.	Place of residence	Urban	92(88.88%)	100(88.14%)	142(85.05%)
		Rural	12(11.11%)	13(11.86%)	25 (14.95%)
4.	Maternal education	Graduate and above	85(81.48%)	42(72.41%)	138(82.76%)
		Up to Higher Secondary	19(18.52%)	82 (27.59%)	29(17.24%)
5	Paternal education	Graduate and above	102(98.11%)	100(88.14%)	157(94.25%)
		Up to Higher Secondary	2(1.88%)	13(11.86%)	10(5.75%)

Table 2: Distribution of study subjects as per the EI scores (n=384)

EI score	Scores	Percentages
Above average score	248	64.5%
below average score	136	35.5%
Total	384	100%

Table 3: Association between demographic factors and EI scores (n=384)

Sr. No.	Characteristics	Category	Below average EI	Above average EI	Chi square p value
1	Age (years)	20-22 yrs.	102(69.74%)	44 (30.26%)	
		23-25 yrs.	100 (61.90%)	61 (38.10%)	0.22
		>25 yrs.	46 (60.00%)	31 (40.00%)	
2	Gender	Male	56(56.87%)	42 (43.14%)	0.186
		Female	192 (67.11%)	94(32.89%)	
3.	Place of residence	Urban	210 (66.24%)	107(33.75%)	0.1385
		Rural	38 (57.14%)	29 (42.86%)	
4.	Maternal education	Graduate and above	208(68.35%)	96(31.65%)	0.001*
		Up to Higher Secondary	39 (48.78%)	40(51.22%)	
5	Paternal education	Graduate and above	225(62.90%)	133(37.10%)	0.032*
		Up to Higher Secondary	21(84.00%)	4 (16.00%)	

* $p < 0.05$ is statistically significant

Table 4: One Way ANOVA for distribution of study subjects as per mean EI scores (n=384)

Sr. No	Study subjects	Total mean score
1	Residents	114.54 ±21.0
2	Interns	104.87± 22.6
3	Undergraduates	100.11± 22.58

F Statistics – 7 081, p value – 0 00107

females generally have higher EI than males.[8,19]

In another report, males were found to have higher EI as compared to the other traits measured which were similar for both the genders.[20,24]This gender equivalence in the EI score may reflect the similar nature of experiences and balance in the maturity levels attained by both the genders at this particular age of 22-25 years that may have been reflected as similar EI scores in the study.

Similarly, there was no statistically significant difference between the place of residence and EI scores. Similar results found by George P. et al.[4] but contrasting results were shown by Abhousera S et al.[25]

As far as parental education is concerned our study showed the statistically significant association. As the education cadre raises the emotional intelligence among the students also increases. Similar results shown by Butler L et al.[26]i.e. students whose mothers had higher education, performed better in the EI domain which was found to be statistically significant. This reflects on the general upbringing of the children of educated parents who tend to correct the deviant emotions and behaviors of their children as they are growing up. This inculcates better ability to handle their emotions and express and act accordingly among the children whose parents are more educated and participate in the emotional wellbeing of their children.

There was a statistically significant gain in EI scores among the residents or the postgraduate students as compared to interns and undergraduate students. Some of the studies have corroborated with this finding of improved EI scores over the years of medical schooling.[27,28]This may be attributed to the acclimatization with the stressors in the medical field over the years and also to the cumulative experience and exposure to handling a variety of situations that need development of emotional intelligence among the medical postgraduate students as compared to their younger counterparts that is the interns and medical undergraduate students.

Thus, to conclude, there was over good Emotional Intelligence observed among the medical students that was positively corelated to the parental education and advanced educational level.

Limitation:

here might have been under-reporting or a minor chance of misclassification bias due to the self-reporting nature of the google forms that were used for data collection. Another limitation is that the findings cannot be generalized as it was a single center study conducted on a non-representative population. Causal association could not be established.

Conclusion

This study showed that the level of emotional intelligence among most of the medical students was above average. Higher parental education and advanced academic stage has better EI scores among the medical students.

Recommendations

As nearly 35% of the study population were having below average or low EI scores, it is imperative to focus on mechanisms to train the medical students towards improving their EI scores. This can be achieved by assessing EI scores and providing need-based sensitization and training sessions to the medical students using EI skills workshops, emotion awareness and handling workshops as well as development of personal and interpersonal skills. The spiritual techniques like mindfulness meditation and practice of yoga can be incorporates in the medical education programme for better emotion management.

Disclosure

Acknowledgment

The authors express their sincere and heartfelt gratitude to all the colleagues and teachers from the institution who spared their valuable time for participation in this study. Special thanks are accorded to Dr. Shilpa Hajare, Dr. Leena Balpande and Dr. Sayali Bhagat from the Department of Community Medicine for their invaluable contribution for encouraging the students to participate in the study and our sincere acknowledgement the Dean of our institute Dr. Kajal Mitra for providing support and encouragement for conducting the study at the institute.

Contribution details

TT designed the concept and overall project, YP analysed the data and drafted the manuscript as well as revised it to the present state, AD read and provided inputs on the manuscript, AS also read and provided feedback on the manuscript.

Declaration of Conflicting Interests
The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding
The authors received no financial support for the research, authorship, and/or publication of this article.

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How to cite this article: Tathe T, Pusdekar Y, Dani A, Saoji A. Emotional Intelligence – The Often-Neglected Quintessential Ingredient for Professional Ethics among Medical Students: A Cross Sectional Study. J Med Sci Health 2025; 11(2):114-120

Date of submission: 10.01.2024
Date of review: 02.02.2024
Date of acceptance: 11.02.2025
Date of publication: 12.05.2025