

Assessment of Emotional Intelligence in Post Graduate Medical Students: A Cross-sectional Study from Rural Medical College in Maharashtra

Mohini Sopanrao Jogdand¹, Meghraj Ramchandra Bhondwe^{2*}, Keerti Sopanrao Jogdand³, Pravin Nathuji Yerpude⁴, Shweta Subhashrao Wadiyar⁵

¹Associate Professor, Dept. of Community Medicine, RCSM Govt Medical College, Kolhapur, Maharashtra, India

²Assistant Professor, Dept. of Community Medicine, Govt Medical College, Jalna, Maharashtra, India

³Associate Professor, Dept. of Community Medicine, Chhindwara Institute of Medical Sciences & Govt Medical College, MP, India

⁴Professor, Dept. of Community Medicine, Chhindwara Institute of Medical Sciences & Govt Medical College, MP, India

⁵Assistant Professor, Dept. of Microbiology, Dr Balasaheb Vikhe Patil Rural Medical College, Pravara Institute of Medical Sciences (Deemed to be University), Loni, India

***Address for Correspondence:** Dr. Meghraj Ramchandra Bhondwe, Assistant Professor, Dept. of Community Medicine, Govt Medical College, Jalna, Maharashtra, India

E-mail: meghraj67@gmail.com & **ORCID ID:** <https://orcid.org/0009-0002-1538-5444>

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ABSTRACT

Background: Emotional intelligence (EI) plays an important role in effective communication, patient care, doctor–patient relationships, stress management, and professional well-being. Postgraduate medical training can be stressful, particularly in rural healthcare settings. This study aimed to assess the level of emotional intelligence among postgraduate medical students and to identify factors associated with emotional intelligence.

Methods: A hospital-based cross-sectional study was conducted from June to September 2023 among postgraduate medical students at a government medical college in Central India. Of 203 postgraduate students, 153 who consented to participate were included. Data were collected through personal interviews using a structured questionnaire. Emotional intelligence was assessed using Schutte's Assessing Emotional Scale (AES). Data were analysed using OpenEpi, and associations were assessed using the Chi-square test, with $p < 0.05$ considered statistically significant.

Results: Among the 153 participants, 70.6% had good EI, 18.3% had high EI, and 11.1% had poor EI. The overall mean EI score was 125.90 ± 13.60 . The highest domain score was for managing own emotions (38.18 ± 5.50), while the lowest was for utilization of emotions (23.97 ± 3.02). EI showed a significant association with year of residency ($p = 0.018$) and physical activity ($p = 0.013$). No significant association was observed with age, sex, marital status, family type, UG College, place of residence, specialty, or substance use.

Conclusion: Most postgraduate medical students demonstrated well to high emotional intelligence. Residency year and regular physical activity were significantly associated with EI. Incorporating health promotion, recreational activities, and mental health assessment may support emotional well-being among postgraduate medical students.

Key-words: Emotional Intelligence (EI), Post Graduate, Medical Student, Rural, Maharashtra

INTRODUCTION

The concept of emotional intelligence (EI) has grown in popularity over the last two decades, generating interest both at a social and a professional level. The emotional intelligence deals with one's ability to perceive, understand, manage, and express emotion within oneself and at the same time in dealing with others ^[1].

Emotional intelligence is the capacity to reason about emotions as they enhance thinking. It includes the abilities to accurately perceive it, access, generate and to

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assist thought, to understand emotion and emotional knowledge and to effectively regulate them so as to promote emotional and intellectual growth (Mayer and Salovey) [2].

According to Goleman, emotional intelligence consists of five components: Knowing our emotions (self-awareness), managing them, motivating ourselves, recognizing emotions in others (empathy), and handling relationships [3]. It is only recently that the concept began to be associated with patient-centered practice. Within the therapeutic relationships, professionals must respond to both the technical aspects of disease as well as associated emotional aspects. In the process, managing their own responses and emotions too, are of paramount importance [4,5]. Recently, the medical field has established the potential benefits of EI for the healthcare system, and there is growing interest in the importance of EI in medical training [6,7]. Higher individual EI has multiple proposed benefits, such as reducing stress, burnout and increasing work satisfaction. The business world recognizes EI as beneficial in terms of performance and outcomes [6].

Few studies have examined the association between EI and burnout among surgical residents. A cohort study conducted in the Northeastern United States showed that high EI and positive work experiences were associated with a low incidence of burnout among general surgery residents [8]. Other studies have suggested that EI may have a significant impact on a resident's ability to control the stress associated with medical training, and be useful for optimizing their wellness [9,10]. With ever increasing patient load and fewer resident doctors to attend those it's inevitable that the Indian post graduate medical students may face stress during work. To cope up with this they need immense mental strength and emotional quotient. Very few studies have been carried out regarding the emotional intelligence of the post graduate doctors working in government medical colleges that too situated in rural set ups. With this aim in consideration present study is planned.

MATERIALS AND METHODS

Study Design and Study Setting- A Hospital based Cross-Sectional study was conducted from June 2023 to September 2023 among the Post Graduate medical (PG)

students at a Government medical college from Central India.

Study Population and Sample Size- There were a total 203 Post graduate students in this medical college studying in first, second and third year of their residency during the study period. Out of them 153 were willing to participate in the study and gave informed consent and hence were included in the study.

Inclusion and Exclusion Criteria- PG students who refused to take part in study or were absent at the time of data collection for three consecutive attempts and were known case of mental disorder or on treatment for morbidity were excluded from the study.

Operational Definition- To assess the emotional intelligence of the participants, a self-report measures of emotional intelligence, Assessing Emotional Scale (AES) by Schutte *et al.* [11] was used. This scale has been termed as Emotional Intelligence Scale Test or The Schutte emotional Intelligence in earlier literature. This scale is based upon Ciarrochi *et al.* [12] model of emotional intelligence, which consist of four components:

- i) appraisal of emotion of self and others,
- ii) expression of emotions,
- iii) regulation of emotions in self and others being third and
- iv) utilization of emotions in solving problems.

This Scale consists of 33 items on five-point scale (1, strongly disagree; 2, Somewhat Disagree; 3, Neither agree nor disagree; 4, Somewhat agree; 5, Strongly agree). The four factors of the scales are represented by the following items.

- ✓ Perception of Emotion: Items No. 5,9,18,19,22,25,29,32,33.
- ✓ Managing own Emotions: Item No. 2,3,10,12,14,15,21,23,28,31.
- ✓ Managing Others Emotion: Item No. 1, 4, 11, 13, 16, 24, 26, 30.
- ✓ Utilization of Emotions: Item No. 6, 7, 8, 17, 20, 27.

The internal consistency of Assessing Emotion Scale (AES) as measured by Cronback's Alpha, is 90 as reported by Schutte *et al.* [12] in the developmental sample of 346 participants.

Physical Activity- Any bodily movement that requires energy expenditure (e.g.- yoga, jogging, running, cycling, brisk walking, gym) at least for 30 minutes thrice in a week.

Data Collection- Ethical clearance from institutional ethics committee was obtained before commencement of the study with letter number SRTRGMC/Pharma/IEC/55. Written informed consent was obtained prior to the study which signed by PGs. Data was collected by using questionnaire schedule by personal interview method. Information was collected regarding sociodemographic profile, academic profile and EI Assessment was done using Schutte's scale.

Statistical Analysis- Data was entered in Microsoft Excel, information collected was presented in tables and diagram. Analysis of the data was done using online Open epi-info. Emotional intelligence score was calculated with mean score, its standard deviation. Association of level of EI with different socio demographic and work-related factors was shown using Chi square test. Significance level was set at 0.05.

RESULTS

The findings from Table 1 provide insights into the demographic and lifestyle characteristics of the surveyed group. The majority (60.1%) are aged 26-30 years, while 22.9% are over 30, and 17% are under 25. There is a fairly balanced distribution of Male (47.1%) and Female (52.9%) participants. A larger proportion of the individuals are Unmarried (67.3%), while 32.7% are married. More participants come from Rural areas (66%), compared to Urban areas (34%). Most individuals belong to Nuclear families (62.1%), while 30.1% are from Joint families, and 7.8% from Three Generational families. A majority (78.4%) do not use substances, while 21.6% report substance use. More respondents studied UG course in Government medical colleges (56.9%) than in Private colleges (43.1%). Clinical PG courses (57.5%) are more common than Non-Clinical/Para-Clinical (42.5%) specialties. The highest percentage are JR-I (37.9%), followed by JR-II (34%), and JR-III (28.1%). Among participants 61.4% engage in regular physical activity, while 38.6% do not.

Table 1: Socio-demographic & lifestyle profile of the study participants.

Variable		Number (n=153)	Percentage (%)
Age Group	<25	26	17.0
	26-30	92	60.1
	>30	35	22.9
Sex	Male	72	47.1
	Female	81	52.9
Marital Status	Married	50	32.7
	Unmarried	103	67.3
Native Address	Urban	52	34.0
	Rural	101	66.0
Type of Family	Joint	46	30.1
	Nuclear	95	62.1
	Three Generational	12	7.8
H/O Substance use	Yes	33	21.6
	No	120	78.4
UG Medical College	Government	87	56.9
	Private	66	43.1
PG Specialty	Clinical	88	57.5
	Non-Clinical/Para clinical	65	42.5
Current PG residency year	JR-I	58	37.9
	JR-II	52	34.0
	JR -III	43	28.1
physical activity	Yes	94	61.4
	No	59	38.6

The majority (70.6%) of individuals had good EI level, indicating strong emotional intelligence. High EI was found among 18.3% of individuals which is a smaller but

still a good proportion. Also, 11.1% of individuals have poor emotional intelligence, representing the smallest group (Fig. 1).

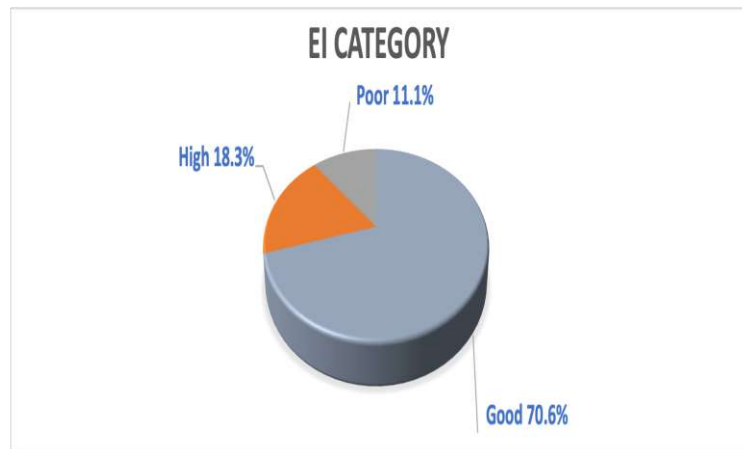


Fig. 1: Emotional intelligence levels among study participants

Table 2 presents the mean scores and standard deviations for the individual emotional intelligence domains. The overall mean EI score was 125.90 ± 13.603 . Among the individual domains, managing own emotions

had the highest mean score (38.18 ± 5.495), followed by perception of emotions (33.82 ± 4.821) and managing others' emotions (29.98 ± 3.762). Utilization of emotions had the lowest mean score (23.97 ± 3.015).

Table 2: EI scores with individual domains

EI DOMAINS	Mean	SD
perception of emotions	33.82	4.821
managing own emotion	38.18	5.495
managing others emotion	29.98	3.762
Utilization of emotion	23.97	3.015
TOTAL	125.90	13.603

Table 3 presents a breakdown of Emotional Intelligence (EI) categories (High, Good, Poor) across different demographic and lifestyle variables. It also includes statistical results (Chi-square test and p-values) to determine significant associations. The >30 years group has the highest percentage of "Good" EI (80%) while the 26-30 years group has the highest percentage of "Poor"

EI (15.2%). There is no significant association between age and EI. More females (15.3%) fall into the "Poor" EI category than males (7.4%). No significant association was found between sex and EI. Government medical college students have a slightly higher percentage of "Good" EI (71.3%) compared to private college students (69.7%).

Table 3: Breakdown of EI Categories with respect to Variables

Variables		EI Category			Total (N=153)	Chi square value	p-value
		High	Good	Poor			
Age group	<25	20(76.9%)	5(19.2%)	1(3.8)	26	4.913	0.296
	>30	28(80%)	5(14.3%)	2(5.7%)	35		
	26-30	60(65.2%)	18(19.6%)	14(15.2%)	92		
Sex	Male	58(71.6%)	17(21)	6(7.4%)	81	2.829	0.243
	Female	50(69.4%)	11(15.3%)	11(15.3%)	72		

Type of family	Joint	34(73.9%)	8(17.4%)	4(8.7%)	46	0.751	0.945
	Nuclear	65(68.4%)	18(18.9%)	12(12.6%)	95		
	Three generation	9(75)	2(16.7%)	1(8.3%)	12		
UG College	Govt	62(71.3%)	17(19.5%)	8(9.2%)	87	0.849	0.654
	Pvt	46(69.7%)	11(16.7%)	9(13.6%)	66		
Native address	Rural	38(73.1%)	7(13.5%)	7(13.5%)	52	1.469	0.48
	Urban	70(69.3%)	21(20.8%)	10(9.9%)	101		
Marital status	Married	34(68%)	11(22)	5(10%)	50	0.708	0.702
	Unmarried	74(71.8%)	17(16.5%)	12(11.7%)	103		
Speciality	Clinical	63(71.6%)	13(14.8%)	12(13.6%)	88	2.627	0.269
	Non-clinical	45(69.2%)	15(23.1%)	5(7.7%)	65		
Year of residency	JR-I	45(77.6%)	4(6.9%)	9(15.5%)	58	11.921	0.018
	JR-II	32(61.5%)	13(25%)	7(13.5%)	52		
	JR-III	31(72.1%)	11(25.6%)	1(2.3%)	43		
H/O Substance use	No	86(71.7%)	23(19.2%)	11(9.2%)	120	2.213	0.331
	Yes	22(66.7%)	5(15.2%)	6(18.2%)	33		
H/O Physical activity	No	36(61%)	11(18.6%)	12(20.3%)	59	8.612	0.013
	Yes	72(76.6%)	17(18.1%)	5(5.3%)	94		

Rural respondents (73.1%) show slightly higher "Good" EI compared to urban respondents (69.3%). Urban individuals have a slightly higher percentage in the "High" category. No significant association was found with level of EI and participant's UG College and place of residence. Marital status also had no significant association with level of EI. Clinical PG students (71.6%) show slightly better EI than non-clinical students (69.2%). Significant association was found ($p=0.018$) with year of residency as second year resident having 'high' EI (25%) as compared to those in first and last year of residency. No significant difference among joint, nuclear, or three-generation families ($p=0.945$). Those with a history of addiction have a higher percentage in the "Poor" EI category (18.2%) than those without addiction (9.2%) but it was not statistically significant association ($p=0.331$). Those who engage in physical activity have higher "Good" EI (76.6%) and lower "Poor" EI (5.3%) compared to those who do not engage in physical activity have lower "Good" EI (61%) and much higher "Poor" EI (20.3%) this was statistically significant.

DISCUSSION

The results indicate that the majority of individuals (70.6%) exhibit "Good" Emotional Intelligence (EI), while 18.3% fall into the "High" EI category, and 11.1% have "Poor" EI. Similarly, Bar-On ^[13] found that around 75% of individuals in his study displayed moderate-to-high EI, closely matching the findings of this study (88.9% falling in "Good" and "High" EI categories). The relatively small proportion of individuals with "Poor" EI (11.1%) also aligns with prior research, which suggests that while some individuals struggle with emotional regulation and social intelligence, they are typically a minority ^[14].

The demographic data of the study population indicate that the majority of participants belong to the 26–30 years age group (60.1%), with a smaller proportion in the <25 years (17.0%) and >30 years (22.9%) groups. Given that the findings on Emotional Intelligence (EI) showed no significant association with age, this distribution suggests that other factors, such as education, experience, and personal attributes, might play a larger role in determining EI levels ^[15]. Previous research has shown mixed results regarding age and EI, with some

studies suggesting a positive correlation ^[16] and others, like this study, finding no significant association ^[17].

The gender distribution in this study is relatively balanced, with 52.9% female and 47.1% male participants. Studies on gender differences in EI have been inconclusive. While some research suggests that women tend to score higher in EI, particularly in aspects such as empathy and emotional regulation ^[18], other studies find no significant difference ^[19]. The relatively equal representation in this study suggests that gender may not be a primary determinant of EI, but further analysis would be needed to confirm this.

Most participants were unmarried (67.3%), while 32.7% were married. Research has suggested that marital status can influence EI, as married individuals often develop greater emotional regulation and interpersonal skills through their relationships (Bar-On) ^[13]. However, since no significant association was found in this study between age and EI, the role of marital status remains unclear.

Rural-urban differences may also affect emotional intelligence, as urban individuals might have greater exposure to diverse social interactions, potentially enhancing EI skills. However, previous studies have found mixed results regarding this association ^[20].

A majority of participants belonged to nuclear families (62.1%), followed by joint families (30.1%) and three-generational families (7.8%). Family structure has been suggested to influence emotional intelligence, as joint and extended family systems may provide more opportunities for emotional learning and interpersonal interaction ^[13]. However, this study did not explore this factor in depth.

Approximately 21.6% of participants reported substance use, while 78.4% did not. Previous studies have found that individuals with lower EI are more likely to engage in substance use as a coping mechanism ^[16]. Given that 11.1% of participants had poor EI in this study, there may be an overlap between substance use and low EI, though further statistical analysis would be required to establish this relationship.

More participants were from government UG medical colleges (56.9%) than private institutions (43.1%), and most were pursuing clinical specialties (57.5%). Research has suggested that education and professional specialization can impact EI, as individuals in clinical fields may develop stronger interpersonal skills through

patient interactions ^[17]. However, non-clinical and para-clinical students may develop other aspects of EI, such as managing own emotions.

A significant portion of participants (61.4%) reported engaging in physical activity. Studies have found a positive correlation between physical activity and EI, as regular exercise is linked to better emotional regulation and stress management ^[19]. This aligns with findings from Bar-On ^[13], who suggested that emotionally intelligent individuals often engage in health-promoting behaviours.

More research is required for the study of emotional intelligence and stress in the medical students and researchers and physicians should come up with the ways in which the training and teaching of medical students can be improved to maintain high level of mental and physical health in them ^[21-24].

LIMITATION

Cross sectional study, casual relation can't be established. Can't generalise the results as study done in single centre.

CONCLUSIONS

This study provides an overview of emotional intelligence among postgraduate medical students and identifies factors that may influence EI. The majority of participants demonstrated good emotional intelligence, while significant associations were observed with residency year and physical activity. Although age, gender, family structure, substance use, educational background, place of residence, marital status, and specialty were not significantly associated with EI, these factors may still warrant further investigation in larger populations. The higher proportion of good EI among participants engaged in physical activity highlights the potential importance of healthy lifestyle practices in promoting emotional well-being. Future studies should explore the relationship between substance use, physical activity, stress, and EI in greater depth. Longitudinal and multicentric studies are also recommended to determine changes in EI over time and to better understand factors contributing to its development among postgraduate medical students.

CONTRIBUTION OF AUTHORS

Research concept- Meghraj Ramchandra Bhondwe, Shweta Subhashrao Wadiyar, Mohini Sopanrao Jogdand

Research design- Meghraj Ramchandra Bhondwe, Shweta Subhashrao Wadiyar, Mohini Sopanrao Jogdand

Supervision- Mohini Sopanrao Jogdand, Keerti Sopanrao Jogdand, Pravin Nathuji Yerpude

Materials- Meghraj Ramchandra Bhondwe, Shweta Subhashrao Wadiyar

Data collection- Meghraj Ramchandra Bhondwe, Shweta Subhashrao Wadiyar

Data analysis and interpretation- Mohini Sopanrao Jogdand, Keerti Sopanrao Jogdand, Pravin Nathuji Yerpude

Literature search- Meghraj Ramchandra Bhondwe, Shweta Subhashrao Wadiyar

Writing article- Meghraj Ramchandra Bhondwe, Shweta Subhashrao Wadiyar

Critical review- Mohini Sopanrao Jogdand, Keerti Sopanrao Jogdand, Pravin Nathuji Yerpude

Article editing- Meghraj Ramchandra Bhondwe, Shweta Subhashrao Wadiyar

Final approval- Mohini Sopanrao Jogdand, Keerti Sopanrao Jogdand, Pravin Nathuji Yerpude

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