

EMOTIONAL MATURITY AND EMOTIONAL INTELLIGENCE AMONG FIRST-YEAR AND FINAL-YEAR MEDICAL STUDENTS AT A TERTIARY CARE CENTRE: A COMPARATIVE CROSS-SECTIONAL STUDY

Annie Sandhu¹, Kuldeep Singh Sandhu², Rajnish Raj³, Daljinder Singh⁴, Sikha Goel⁵, Pahul Singh Sandhu⁶

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Corresponding Author:

Dr. Daljinder Singh,

Email: drdaljinders@yahoo.com

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¹GDMO, Sarbat Hospital, Maloud, Ludhiana, Punjab India.

²Assistant Professor, Department of Orthopaedics, GMC Patiala, Punjab India

³Professor & Head, Department of Psychiatry, GMC Patiala, Punjab India.

⁴Associate Professor, Department of Orthopaedics, GMC Patiala Punjab India.

⁵Assistant Professor, Department of Psychiatry, GMC Patiala Punjab India.

⁶Medical Undergraduate, UCMS, Delhi, India.

ABSTRACT

Background: Medical education requires students to acquire not only biomedical knowledge and clinical skills but also the ability to understand, regulate and appropriately express emotions. Emotional intelligence (EI) refers to the ability to perceive, understand, regulate and use emotions effectively, whereas emotional maturity (EM) represents emotional stability, appropriate social adjustment, personality integration and independence. **Aim:** To compare emotional intelligence and emotional maturity among first-year and final-year medical students at a tertiary care teaching centre.

Objectives

1. To assess emotional intelligence among first-year and final-year medical students.
2. To assess emotional maturity in both groups.
3. To compare emotional intelligence between first-year and final-year students.
4. To compare emotional maturity between the two groups.
5. To determine the relationship between emotional intelligence and emotional maturity.
6. To identify measures that may improve emotional competencies during undergraduate medical education.

Materials and Methods: A comparative cross-sectional study was designed among first-year and final-year undergraduate medical students at a tertiary care medical centre in one year from January 2022 to December 2022. For this illustrative analysis, 200 students were considered, with 100 students in each group. Emotional intelligence was assessed using the Wong and Law Emotional Intelligence Scale (WLEIS), while emotional maturity was assessed using the Singh and Bhargava Emotional Maturity Scale (EMS). Independent-samples t tests were used for comparison. **Illustrative Results:** Final-year students demonstrated higher mean emotional intelligence scores than first-year students (84.9 ± 7.9 vs 78.4 ± 8.6 ; $t = 7.02$, $p < 0.001$, Cohen's $d = 0.79$). Because higher scores on the Singh-Bhargava EMS indicate greater emotional immaturity, the lower score among final-year students indicated better emotional maturity (116.8 ± 18.1 vs 132.6 ± 20.4 ; $t = 11.25$, $p < 0.001$, Cohen's $d = 0.82$). **Conclusion:** The illustrative findings suggest that emotional intelligence and emotional maturity may improve during medical education, potentially as a result of increasing clinical exposure, interpersonal experience and professional development. However, emotional competencies should not be assumed to develop automatically. Structured interventions involving reflective practice, communication training, mentorship, counselling and experiential learning may help medical students develop these competencies.

INTRODUCTION

Medical education is traditionally centred on acquisition of knowledge, diagnostic reasoning and technical competence. However, effective medical practice requires considerably more than cognitive ability. Physicians interact with patients experiencing pain, fear, uncertainty and grief, while simultaneously communicating with relatives, nurses, residents, consultants and other healthcare professionals.

The emotional demands of medicine make the ability to understand and regulate emotions particularly important. Emotional intelligence has been described as involving the perception, processing, regulation and management of emotions. A systematic review in medical education found associations between emotional intelligence and doctor-patient relationships, empathy, teamwork, communication, stress management and leadership.

Emotional intelligence and emotional maturity are related but should not be considered synonymous. Emotional intelligence primarily concerns the capacity to recognize, understand, regulate and utilize emotional information. The Wong and Law Emotional Intelligence Scale (WLEIS), for example, evaluates self-emotion appraisal, others' emotion appraisal, use of emotion and regulation of emotion. Emotional maturity represents broader behavioural and personality characteristics associated with emotional stability, emotional progression, social adjustment, personality integration and independence. The Singh and Bhargava Emotional Maturity Scale contains 48 items distributed across five areas and is scored so that higher scores represent greater emotional immaturity.

The distinction is important. A student may recognize that another person is distressed but still be unable to respond appropriately. Similarly, an emotionally mature student may demonstrate stability and independence without necessarily having highly developed emotional-awareness skills.

Medical students also undergo substantial developmental change during their undergraduate education. First-year students enter medical school from a predominantly classroom-based educational environment, whereas final-year students have experienced clinical postings, patient interactions, death and dying, examinations, teamwork and greater professional responsibility.

Therefore, comparing students at different stages of medical education may help determine whether emotional competencies increase during medical training and identify areas requiring formal educational intervention.

Aim

1. To compare emotional maturity and emotional intelligence among first-year and final-year medical students studying at a tertiary care teaching centre.

Objectives

1. To assess emotional intelligence among first-year medical students.
2. To assess emotional intelligence among final-year medical students.
3. To assess emotional maturity among first-year medical students.
4. To assess emotional maturity among final-year medical students.
5. To compare EI between first-year and final-year students.
6. To compare EM between the two groups.
7. To assess the association between emotional intelligence and emotional maturity.
8. To suggest preventive and educational strategies for improving emotional competencies among medical students.

MATERIALS AND METHODS

Study design

A comparative cross-sectional observational study was designed.

Study setting

The proposed study was conducted at the medical college and tertiary care hospital attached to a tertiary healthcare centre in Punjab, India. In one year from January 2022 to December 2022

Study population

The study population would comprise undergraduate MBBS students from first year and final year.

Sample size

For this manuscript, an illustrative sample of 200 students was used: first-year students $n=100$ and final-year students $n=100$. The actual sample size should be calculated before recruitment using the expected difference in mean scores, standard deviation, desired power and significance level.

Inclusion Criteria

- Undergraduate MBBS students enrolled at the institution.
- First-year or final-year students.
- Age ≥ 18 years
- Students willing to participate.
- Written informed consent.

Exclusion Criteria

- Students unwilling to participate.
- Incomplete questionnaires.
- Students absent during the data-collection period.
- Any additional exclusions required by the institutional ethics committee.

Study instruments

1. Wong and Law Emotional Intelligence Scale (WLEIS): a 16-item instrument assessing self-emotion appraisal, others' emotion appraisal, use of emotion and regulation of emotion.
2. Singh and Bhargava Emotional Maturity Scale (EMS): a 48-item scale covering emotional stability, emotional progression, social adjustment, personality integration and

independence. Higher overall scores indicate greater emotional immaturity.

Data collection

After institutional ethical approval, eligible students would be approached during a scheduled academic session. The purpose of the study would be explained and written informed consent obtained. Questionnaires would be completed anonymously and each participant would receive a unique study identification number.

Statistical Analysis

Continuous variables would be expressed as mean $\pm$ standard deviation. Categorical variables would be presented as frequency and percentage. Independent-samples t test would be used for normally distributed

continuous variables; Mann-Whitney U test for non-normal data; chi-square test for categorical variables; and Pearson or Spearman correlation for relationships between EI and EM. A two-tailed p value <0.05 would be considered statistically significant. Effect sizes should also be reported.

RESULTS

IMPORTANT: The following numerical findings are illustrative and are provided to demonstrate how the Results section and statistical presentation can be written. They must be replaced by actual collected data and SPSS/R output before publication.

Demographic characteristics

Variable	First year (n=100)	Final year (n=100)
Mean age, years	18.9 $\pm$ 0.8	22.3 $\pm$ 0.9
Female, n (%)	56 (56%)	58 (58%)
Male, n (%)	44 (44%)	42 (42%)

Emotional intelligence

The mean total WLEIS score was higher among final-year students.

Group	Mean EI score	SD
First year	78.4	8.6
Final year	84.9	7.9

Mean difference = 6.5 points; $t = 7.02$; $p < 0.001$; Cohen's $d = 0.79$.

Emotional maturity

The illustrative EMS scores were lower among final-year students. Because a higher EMS score represents greater emotional immaturity, the lower score in final-year students suggests better emotional maturity.

Group	Mean EMS score	SD
First year	132.6	20.4
Final year	116.8	18.1

Mean difference = 15.8 points; $t = 11.25$; $p < 0.001$; Cohen's $d = 0.82$.

Summary of comparative analysis

Variable	First year Mean $\pm$ SD	Final year Mean $\pm$ SD	t	p value	Cohen's d
Emotional intelligence	78.4 $\pm$ 8.6	84.9 $\pm$ 7.9	7.02	<0.001	0.79
Emotional maturity*	132.6 $\pm$ 20.4	116.8 $\pm$ 18.1	11.25	<0.001	0.82

*For EMS, a lower score indicates greater emotional maturity.

DISCUSSION

The illustrative findings demonstrate that final-year students had higher emotional intelligence and lower emotional maturity scores than first-year students. The differences were statistically significant and had moderate-to-large effect sizes.

One possible explanation is progressive exposure to the clinical environment. First-year medical students generally encounter a major transition from school-level or pre-university education to professional education. They must adapt to a demanding academic curriculum, new peer groups, unfamiliar institutional structures and the expectations of medical training. Final-year students, in contrast, have accumulated several years of exposure to patients and healthcare professionals. They have encountered clinical uncertainty, difficult conversations, patient suffering, death, teamwork and examination-related stress.

These experiences may contribute to improved emotional regulation and social adaptation.

However, the cross-sectional design cannot establish that medical education itself caused these differences. Students entering medical school may already differ in emotional characteristics from those who ultimately reach the final year. Longitudinal studies would be superior for determining individual developmental change.

The distinction between EI and EM is particularly relevant. Emotional intelligence describes emotional information-processing and regulatory abilities, whereas emotional maturity encompasses broader behavioural adaptation. Therefore, the two constructs should ideally be assessed independently rather than using one as a surrogate for the other.

The literature also suggests that emotional intelligence is not necessarily a fixed characteristic. Intervention studies in medical education have

explored reflective writing, narrative medicine, communication training, experiential learning, stress management and structured EI programmes.

Emotional Intelligence versus Emotional Maturity

Emotional intelligence emphasizes recognition, understanding and regulation of emotions, whereas emotional maturity emphasizes emotional stability, independence, social adjustment and personality integration. Both are relevant to communication, empathy, teamwork, coping and professionalism, but they should be measured as distinct constructs.

Prevention and Intervention Measures

1. Structured emotional-intelligence education: introduce modules covering recognition of emotions, self-awareness, emotional regulation, empathy and conflict management.
2. Reflective practice: students can maintain structured reflective diaries after difficult clinical encounters.
3. Communication-skills training: include breaking bad news, dealing with angry relatives, responding to distressed patients, conflict resolution and shared decision-making.
4. Mentorship: assign faculty mentors who can identify emotional exhaustion, poor coping, academic disengagement and interpersonal difficulties.
5. Peer-support programmes: create senior-junior peer groups for discussion of academic and emotional challenges.
6. Psychological counselling: provide confidential, accessible and stigma-free counselling services.
7. Stress-management programmes: training in exercise, sleep hygiene, mindfulness, breathing techniques, time management and relaxation.
8. Simulation and role-play: expose students to emotionally difficult clinical situations in a controlled environment followed by feedback.
9. Faculty development: train faculty in emotional competencies and positive role modelling.
10. Periodic assessment: consider EI/EM assessment at major educational transition points, primarily for development and support rather than punitive grading.

Limitations

1. A cross-sectional study cannot establish causality.
2. Self-reported questionnaires may be affected by social desirability bias.
3. Emotional intelligence is multidimensional and different instruments may measure different constructs.
4. A single tertiary care centre may limit generalizability.
5. Differences between first- and final-year students may partly reflect age and developmental differences rather than medical education alone.
6. The Singh-Bhargava EMS has an unusual scoring direction in which higher scores indicate

greater emotional immaturity; this must be explicitly explained.

7. The numerical results in this draft are illustrative and must be replaced by actual collected data.

Recommendations for Future Research

A multicentric longitudinal study should follow students from first year through internship. Future studies could additionally evaluate academic performance, empathy, burnout, perceived stress, sleep quality, clinical communication, professionalism and patient satisfaction. A pre-test/post-test design could determine whether a structured EI programme produces measurable improvement.

CONCLUSION

Emotional intelligence and emotional maturity represent complementary but distinct dimensions of medical professionalism. Emotional intelligence emphasizes the ability to perceive, understand and regulate emotions, whereas emotional maturity encompasses broader emotional stability, social adjustment, personality integration and independence.

In the illustrative analysis, final-year medical students demonstrated higher emotional intelligence and better emotional maturity than first-year students, with statistically significant differences and moderate-to-large effect sizes.

The findings support the concept that emotional competencies deserve greater attention in undergraduate medical education. However, the observed differences should not automatically be attributed to medical training because of the cross-sectional design.

Medical schools should therefore move beyond purely cognitive and technical education and incorporate structured emotional-intelligence training, reflective practice, communication skills, mentorship, peer support, counselling, simulation and stress-management programmes. Ultimately, producing a competent doctor requires not only knowledge and technical expertise but also the ability to understand oneself, understand others, regulate emotions and respond to patients with stability, empathy and professionalism.

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