



Original Article



Emotional Intelligence and Academic Performance in First-Year and Third-Year Promoted Medical Students

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ABSTRACT

Emotional intelligence association with academic performance is assessed as it may be linked to higher academic achievement and improved empathy. **Objectives:** To fill the gap in existing research by examining the relationship between emotional intelligence and academic performance among first-year and third-year medical students. **Methods:** An analytical cross-sectional study in a private medical college of Faisalabad was done from September 2022 to August 2023. The academic performance of medical students was measured using their recent professional examination results. The first- and third-year promoted students were invited to participate. Students filled online Google-generated questionnaire form. Data were examined using SPSS version 22.0. Pearson correlation was employed to measure the association between emotional intelligence and academics and an independent sample T-test was used to compare means between MBBS classes. **Results:** 176 medical students (84 first-year promoted and 92 third-year promoted) participated in this study. A weak positive correlation between last exam marks and emotional intelligence was observed with significant p-values between exam marks and self-awareness (0.25, p=0.001); self-management (0.02, p=0.005); social awareness (0.19, p=0.006) and relationship management (0.19, p=0.006). The mean of all four elements (Self-assessment, self-management, social awareness, and relationship management) of emotional intelligence was higher (17.47, 17.11, 17.36 and 17.46) in third-year promoted students than first-year promoted students (15.76, 15.61, 15.79 & 15.64) respectively. **Conclusions:** It was concluded that third-year promoted medical students found more emotionally intelligent performed better in their recent professional examination than first-year promoted medical students found weaker in emotional intelligence.

INTRODUCTION

Emotional intelligence (EI) is a multi-faceted concept that includes the capacity to identify, comprehend, and control one's own emotions as well as those of others. EI has a relatively direct effect on how relationships develop, and personal success levels in all areas like education and even at work [1]. Specifically, in medical school where students are likely to experience higher stress levels and extremely high academic demands; emotional intelligence plays a vital role [2]. The main may include self-awareness, self-regulation, motivation, empathy, and social skills. Self-awareness entails recognizing one's emotions and their effects on them [3]. Self-regulation refers to controlling emotions in healthy ways, maintaining composure, and reflecting before acting. Motivation involves using feelings

to persistently pursue goals while empathy means understanding and sharing other people's feelings as social skill encompasses directing people's management through interpersonal relationships [4]. These dimensions find expression in the day-to-day lives of medical students including how they perceive themselves within examination periods or when they are rotating among patients [5]. Patient care necessitates the use of empathy, as it helps students form relationships with their patients and understand what they go through. So, a higher degree of EI could potentially be beneficial for both medical students' academic performance and general well-being [6]. Theory examinations, practical skills checks, and clinical evaluations are the main ways that are employed to



gauge academic success among medical students. The aforementioned fields require not only cognitive intelligence but also emotional intellect that is profound [7]. Thus, Emotional Intelligence can help one to manage stress effectively, communicate efficiently with his/her peers and tutors as well as stay motivated throughout prolonged learning periods [8]. The journey from freshman to junior year in medical school represents a critical transition. The first-year class usually focuses on basic sciences and primarily involves didactic instruction in classrooms. However, the third year often signals the beginning of clinical rotations where they engage in the application of knowledge to real-life situations and acquire practical skills that will help them become physicians later on. This shift is accompanied by heightened anxiety levels as well as an increased need for higher emotional-social competencies that can support effective adaptation [9]. Insight into the development of emotional intelligence across time and its effect on academic performance can be obtained by examining the variation between juniors and seniors in terms of their EI. Nevertheless, it is a complicated matter as many factors determine how EI is related to school grades such as individual differences among students, teaching methods employed, and the educational environment in which learning takes place [10]. These medical students will be compared with their peers from other years to investigate how EI changes with medical training over time and affects academic success. The instruments used for assessing EI have been validated while academic metrics will generate dependable results. This study also provides empirical evidence for educational psychology at large about the significance of emotional intelligence in high-pressure situations associated with education. It also stresses the need for supportive interventions that help students develop emotional and social skills critical for success in their academics as well as professional lives. Emotional intelligence is an essential, but often neglected component in attaining successful medical education outcomes.

This study aims to fill the gap in existing research by examining the relationship between EI and academic performance among first-year and third-year medical students. By understanding how EI influences academic outcomes and how it evolves, educators can better support their students in achieving their full potential.

METHODS

An analytical cross-sectional study was conducted among all students of 2nd-year and 4th-year MBBS classes. Non-probability convenience sampling was done. Informed consent was taken beforehand. All those who gave consent and passed their exam were included, and the rest were excluded. Ethical approval was taken from the institutional ethical review committee with reference number IEC/194-22. The study was done for one year from September 2022 to August 2023 in a private medical college in Faisalabad. A

validated questionnaire "Emotional Intelligence Scale" was used for the data collection from the undergraduates. The questionnaire had 20 questions asked on a Likert scale and 4 dimensions i.e. 5 questions from each dimension i.e. self-awareness (question numbers 1, 5, 9, 12, 15), self-management (question numbers 3, 6, 10, 13, 18), social awareness (question numbers 4, 7, 14, 17, 19), and relationship management (question numbers 2, 8, 11, 16, 20). Scoring was done as never=1, rarely=2, sometimes=3, usually=4, and always=5. So, each dimension have a minimum score of 24 and a maximum score of 25. Any component with a score below 18 needs improvement. An online questionnaire was distributed to all promoted students of 1st-year and 3rd-year MBBS. The Statistical Package for the Social Sciences (SPSS) Version 22.0 was considered to analyze the data. Percentages and means were calculated. Class-wise comparisons were done. p value < 0.05 was taken as significant.

RESULTS

A total of 176 students (84 First year promoted MBBS students) and (92 Third year promoted MBBS students) participated in our research. The mean age of participants was 22.28 + 3.12 years. Most of the participants were from urban areas (112, 64%) and the rest were from rural areas (64, 36%). Emotional intelligence dimensions scoring among the sample population is shown in tabular forms below. Table 1 shows the frequency (%) of self-awareness emotional intelligence dimension. The majority of the participants chose the "usually" option on the Likert scale (Table 1).

Table 1: Self-Awareness Dimension among study participants

Questions	Never n (%)	Rarely n (%)	Some times n (%)	Usually n (%)	Always n (%)
Awareness of Physical Reactions	7(4)	29(16.5)	58(33)	62(35.2)	20(11.4)
Look at Biases and Adjust the Assessment	18(10.2)	35(19.9)	53(30.1)	53(30.1)	17(9.7)
Consider Emotional Temperature	10(5.7)	37(21)	52(29.5)	59(39.5)	18(10.2)
Identify the Emotion at Any Given Moment	7(4)	27(15.3)	39(22.2)	71(40.3)	32(18.2)
Think About the Emotions Behind Actions	6(3.4)	28(15.9)	49(27.8)	61(34.7)	32(18.2)

The frequency (%) of the self-management emotional intelligence dimension is shown. The majority of the participants chose the "usually" option on the Likert scale of most options followed by "sometimes" (Table 2).

Table 2: Self-Management Dimension among study participants

Questions	Never n (%)	Rarely n (%)	Some times n (%)	Usually n (%)	Always n (%)
Stay Composed Even When Angry	11(6.3)	27(15.3)	64(36.4)	60(34.1)	14(8)
Keep Going on A Project Despite Obstacles	4(2.3)	29(16.5)	40(22.7)	70(39.8)	33(18.8)
Pause to Reflect & Decide With A Strong Impulse	22(12.5)	38(21.6)	46(26.1)	46(26.1)	24(13.6)
Honestly Say About Others Without Getting The Upset	14(8)	32(18.2)	51(29)	63(35.8)	16(9.1)
Good \T Managing Your Moods	11(6.3)	30(17)	45(25.6)	66(37.5)	24(13.6)

The frequency (%) of the social-awareness emotional intelligence dimension is shown. Some of the participants chose the "sometimes" option as the most common while the "usually" option was also chosen by some participants on the Likert scale as the most common in an equal number of questions (Table 3).

Table 3: Social-Awareness Dimension among study participants

Questions	Never n (%)	Rarely n (%)	Some times n (%)	Usually n (%)	Always n (%)
Accurate Idea About How Other Person Is Perceiving Me	8(4.5)	32(18.2)	46(26.1)	72(40.9)	18(10.2)
Judge Other People's Mood Based on Non-Verbal Signals	10(5.7)	27(15.3)	61(34.7)	61(34.7)	17(9.7)
Show Empathy and Match Your Feelings with Others	4(2.3)	23(13.1)	51(29)	71(40.3)	27(15.3)
How Others React to Me to Understand	8(4.5)	40(22.7)	55(31.3)	49(27.8)	24(13.6)
Easy to Understand How Other People Feel	5(2.8)	37(21)	62(35.2)	55(31.3)	17(9.7)

The frequency (%) of the relationship-management emotional intelligence dimension is shown (Table 4).

Table 4: Relationship-Management Dimension among study participants

Questions	Never n (%)	Rarely n (%)	Some times n (%)	Usually n (%)	Always n (%)
I admit mistakes and apologize	8(4.5)	25(14.2)	44(25)	66(37.5)	33(18.8)
Others feel encouraged after talking to me	5(2.8)	30(17)	54(30.7)	67(38.1)	20(11.4)
Can deal calmly with emotional displays of others	7(4)	25(14.2)	62(35.2)	60(34.1)	22(12.5)
Respected and liked by others even when they don't agree with me	9(5.1)	27(15.3)	58(33)	75(42.6)	7(4)

Effectively persuade others to adopt my point of view	14(8)	36(20.5)	64(36.4)	46(26.1)	16(9.1)
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As per the interpretation of emotional intelligence scores, any component where the score is below 18 needs improvement, and in our study it's observed that scores of all 4 dimensions were below 18. The mean of all four elements (Self-assessment, self-management, social awareness, and relationship management) of emotional intelligence was higher (17.48, 17.12, 17.37 & 17.46 respectively) in third-year promoted students than first-year promoted students (15.76, 15.62, 15.79 and 15.64). A significant relationship was found between self-awareness and self-management dimensions and MBBS class ($p < 0.05$) (Table 5).

Table 5: Class-Wise Comparison with Emotional Intelligence Dimensions among study participants

Variables	MBBS Class	N	Score Range	Mean \pm SD Class-wise	Total Mean \pm SD	p-value*
Self-Awareness	3 rd year	92	8-24	17.48 \pm 2.89	16.62 \pm 3.44	0.013
	1 st year	84		15.76 \pm 3.77		
Self-Management	3 rd year	92	7-25	17.12 \pm 3.35	16.41 \pm 3.46	0.019
	1 st year	84		15.62 \pm 3.37		
Social-Awareness	3 rd year	92	9-25	17.37 \pm 2.98	16.62 \pm 3.39	0.06
	1 st year	84		15.79 \pm 3.63		
Relationship-Management	3 rd year	92	9-25	17.46 \pm 2.87	16.59 \pm 3.12	0.06
	1 st year	84		15.64 \pm 3.11		

Note: *Independent sample T Test

Pearson correlation test was employed and a weak positive correlation between last exam marks and emotional intelligence was observed with significant p-values between exam marks and self-awareness ($r=0.25$, $p=0.001$); self-management ($r=0.02$, $p=0.005$); social awareness ($r=0.19$, $p=0.006$) and relationship management ($r=0.19$, $p=0.006$).

DISCUSSION

This present study, "Emotional Intelligence (EI) and Academic Performance in First-Year and Third-Year Promoted Medical Students," will comparatively analyze emotional intelligence at these two different levels of medical education in terms of its relationship with academic outcomes. Recent studies all point to the fact that EI significantly predicts academic performance. For instance, Ye Shengyao *et al.*, found a positive relationship between EI and academic achievements among university students [11], which is similar to our study where significant relationships were found between students' academic marks and EI. Research done by Kant showed higher emotional intelligence levels among students [12] similar to our study results. A study done by Suleman *et al.*, showed a strong positive correlation between emotional intelligence and academic success [13] which is similar to our study in terms of positive correlation but differs in

strength as our study showed a weak correlation. A study done by Estrada *et al.*, also showed that higher emotional intelligence is related to better academic performance [14] which is similar to our results. Research done by Trigueros *et al.*, also showed that to get good grades, higher emotional intelligence is necessary [15] which is similar to our study results. Research done by Zhoc *et al.*, showed that for optimal functioning of students to get good grades, emotional intelligence played an important role [16] which is similar to our results. A study done by Alvi *et al.*, showed significant relationships between emotional intelligence dimensions and academic marks which is similar to our study [17]. A study by Rehman *et al.*, showed that from moving upward in the academic world, EI played a significant role [18] which is similar to our study results where 3rd-year MBBS students demonstrated higher EI scores. A study done by Seth *et al.*, showed a significant correlation between emotional intelligence and academic performance which is similar to our study [19]. A study done by Bilimale *et al.*, showed a negative correlation between emotional intelligence and academic scores which is in contrast to our results [20]. The study's limited generalizability stems from its single center of conduct. The findings might not apply to medical students at other universities with distinct student bodies and pedagogies. The lack of diversity in a single center concerning socioeconomic position, colour, ethnicity, and other demographic characteristics may have an impact on how broadly applicable the findings are. Only relationships, not causality, may be established with a cross-sectional study design. To ascertain whether increased emotional intelligence eventually results in improved academic achievement, longitudinal research is required. Academic achievement and emotional intelligence might fluctuate over time, and these dynamics might not be fully captured by a single assessment point. Self-report questionnaires, which are prone to biases including social desirability and a lack of self-awareness, are frequently used to test emotional intelligence. The EI assessment's accuracy may be impacted by certain biases. Recall bias may have an impact on students' self-reported information about their emotional intelligence and even their academic experiences.

CONCLUSIONS

It was concluded that third-year promoted medical students who faced more challenges during their medical life and passed multiple examinations were found more emotionally intelligent, resultantly they performed better in their final examinations as well. Using lectures, workshops, and interactive exercises, acquaint first-year students with the fundamentals of emotional intelligence. Later on, offer advanced Emotional Intelligence training with an emphasis on challenging cases such as managing challenging patients, collaboration in healthcare environments, and leadership abilities.

Authors Contribution

Conceptualization: SI, SA

Methodology: SI, SA, MUK, FSR, MA, MUH

Formal analysis: MUD

Writing review and editing: MUD

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

All the authors declare no conflict of interest.

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