Original Article

Evaluating Emotional Intelligence Among Undergraduate Medical Students: A Cross-Sectional Study from Peshawar, Pakistan

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ABSTRACT

An individual's capacity to comprehend and respond to their own and others' emotions, differentiate among them, and use this skill in directing their thoughts and actions is defined as Emotional Intelligence. **Objective:** To evaluate the emotional intelligence (EI) of undergraduate medical students in Peshawar, Pakistan, based on their gender and year of study. **Methods:** This research project used a cross-sectional, observational study design. The study was carried out in public and private sector medical colleges in Peshawar, Pakistan, from August 2023 to December 2023. A total of 525 complete answers were received. Schutte's Self-Report Emotional Intelligence Test (SSEIT) was the tool utilized to gather data. The data were analyzed using SPSS version 29.0. **Results:** A mean age of 21.12 ± 1.754 was observed among the participants, whose ages varied from a minimum 17 to maximum 28. The overall participant's mean emotional intelligence score is 116.62 14.948. Male scored higher on emotional intelligence (117.36) than female (116.30) and both genders were statistically significant. Compared to clinical science students (115.18), basic science students (117.32) had a higher emotional intelligence mean score, whereas there was no statistical significance between the two groups. **Conclusions:** The research concluded that the majority of undergraduates had an average degree of emotional intelligence, with men scoring higher than women. Also, students studying basic sciences had higher mean scores than clinical science students.

INTRODUCTION

An individual's capacity to comprehend and respond to their own and others' emotions, differentiate among them, and use this skill in directing their thoughts and actions is defined as Emotional Intelligence as defined by Salovey and Mayer [1, 2]. It relates to many parts of medical practice, such as diagnostics, doctor-patient relationships, teamwork (doctor-doctor relationship), interaction, and compassion, and can thus be utilized to enhance both the therapeutic and academic components of medicine [3]. It was found that those with high emotional intelligence experienced less stress, were in better health due to their ability to control their emotions, were able to adjust to their environment, and excelled academically as well as socially [4, 5]. Hence empathic clinicians are more likely to increase patient-doctor relationships, patient trust, contentment, and compliance, as well as generate better therapeutic outcomes [6, 7] It has also been proposed that self-efficacy is related to EI, which is described as having faith in one's capacity to perform well at tasks. Furthermore, successful leadership requires self-awareness, self-management, motivation, empathy, and interpersonal abilities [8]. Compared to earlier scores,

research has indicated a rise in patient satisfaction after training in emotional intelligence for medical residents [9]. Anxiety affects nearly one-third of medical students, according to a recent meta-analysis, it has risen to become the world's sixth biggest cause of disability. Because of its high frequency, major illness load, and detrimental consequences on academic performance, quality of life, professionalism, and patient care quality, anxiety in medical students warrants further attention. EI may be a key predictor of anxiety, according to empirical research [10]. Lately, there has been a push to integrate EI training for healthcare professionals to strengthen leadership, skills to communicate, and minimize stress and burnout. The EI abilities offer a foundation for residents and students to achieve effectiveness. Therefore, the first step in successfully utilizing an EI approach in medicine is evaluating EI in individuals [11]. As EI impacts medical education and practice tremendously, it is of paramount importance to evaluate undergraduate medical students' current levels in this respect.

This study aimed to address the knowledge gaps by providing estimates of EI in this demographic group and investigating the variables of gender and academic discipline; therefore, provides information on interventions and training that could benefit emotional and professional competencies in prospective doctors.

METHODS

This research project used a cross-sectional, observational study design. The study was carried out in public and private sector medical colleges in Peshawar, Pakistan, over five months from August 2023 to December 2023. For this study, non-probability convenient sampling was used. 471 was the sample size with a 97% confidence level that was determined using openepi.com. Google forms and questionnaires were dispersed to several medical colleges. A total of 525 complete answers were received, of which 351 came from private medical institutions and 174 from public medical colleges. Voluntary consent from students enrolled in undergraduate programs served as the study's inclusion criterion. Students who were unwilling to participate, those who dropped out, those who graduated, and interns were all excluded. Incomplete questionnaires were also a reason for exclusion. Every participant received a thorough explanation of the goals and purposes of the study, and consent was obtained. The project was approved by the Northwest School of Medicine's Institutional Review Board and Ethics Committee (IRB&EC/2023-SM/065) Schutte's Self-Report Emotional Intelligence Test (SSEIT) was the tool utilized to gather data [12]. The 33 items on the test examine six different dimensions: positive affect, other people's emotions, happiness, one's own emotions, nonverbal emotions, and emotional management. Except for three variables (i.e., 5, 28, and 33) that were reverse

scored, all 33 items were based on a 5-point Likert scale, where 1 represents strongly disagree and 5 represents strongly agree. The highest score on the scale indicated a high level of emotional intelligence. The scores varied from 33 to 165. Individuals scoring 77 or lower were classified as having low emotional intelligence, those scoring 78 to 121 as having average emotional intelligence, and those scoring 122 to 165 as having high emotional intelligence. The demographic factors included in the questionnaire are the following: age, gender, study year, and institution. Students in their first and second years were placed in the basic science category, while those in their third, fourth, and final years were placed in the clinical science category. The data were analyzed using SPSS version 29.0, frequency analysis and descriptive statistics were utilized. The Independent Sample t-Test was also utilized to determine whether there was a significant difference between the genders of the male and female students as well as between basic and clinical science students.

RESULTS

Out of the 525 participants in the study, 33.1% were affiliated with public medical institutions in Peshawar, Pakistan, while 66.9% were affiliated with private institutions. Participants ranged in age from minimum 17 years to maximum 28 years, with a mean age of 21.12 ± 1.754. Of the participants, 157 (or 29.9%) were men and 368 (70.1%) were women (Table 1).

Table 1: Demographics Characteristics of the Participants (n=210)

Variables	Male (%)	Female (%)	Total (%)
Institution of the Participants			
Public	2 (1.1)	172 (98.9)	174 (100)
Private	155 (44.2)	196 (55.8)	351 (100)
Year of Study of the Participants			
First Year	105 (47.7)	115 (52.3)	220 (100)
Second Year	20 (14.9)	114 (85.1)	134 (100)
Third Year	5 (11.6)	38 (88.4)	43 (100)
Fourth Year	8 (10.8)	66 (89.2)	74 (100)
Final Year	19 (35.2)	35 (64.8)	54 (100)
Total	157 (29.9)	368 (70.1)	525 (100)

Male scored higher on emotional intelligence (117.36) than female (116.30). Additionally, there existed a statistically significant difference between the two genders (Table 2).

Table 2: Comparison of Emotional Intelligence Score with Gender of the Participants (Independent Sample t-test)

Gender	Frequency (%)	Mean ± S.D	p-Value
Male	157 (29.9)	117.36 ± 16.801	0.017
Female	368 (70.1)	116.30 ± 14.096	

Compared to clinical science students (115.18), basic science students (117.32) had a higher emotional intelligence mean score, however, there was no statistically significant difference (Table 3).

Table 3: Comparison of Emotional Intelligence Score with the Year of Study of Participants (Independent Sample t-test)

Year of Study	Frequency (%)	Mean ± S.D	p-Value
Basic Sciences Students	354 (67.4)	117.32 ± 14.380	0.063
Clinical Sciences Students	171 (32.5)	115.18 ± 16.007	

Students' emotional intelligence was divided into three categories: low (1.7%), average (59.8%), and high (38.5%) (Table 4).

Table 4: Levels of Emotional Intelligence of the Participants

Levels	Frequency (%)
Low Emotional Intelligence	9 (1.7)
Average Emotional Intelligence	314 (59.8)
High Emotional Intelligence	202 (38.5)
Total	525 (100)

DISCUSSION

Due to its critical importance to both academic achievement and career success, emotional intelligence (EI) has been the subject of increased research over the past 20 years, with numerous academic papers published on the topic [13]. To the best of our knowledge, this is the first study in the Peshawar area to use the Schutte self-report emotional intelligence test to measure emotional intelligence (EI) in undergraduate medical students. While there was no significant relationship found between gender and emotional intelligence in another study conducted in Iran [3], with study participants consisting of junior and senior medical students, we found a significant difference between emotional intelligence and gender in our investigation. According to a study conducted in Sri Lanka women scored more than men on the EI, with a mean score of 241.5 [14]. Male participants in our study had mean emotional intelligence scores that were higher than female participants. This indicates that, across the six emotional intelligence variables examined in our study, male individuals outperformed female participants. The mean emotional intelligence score from one institute was 122.4, whereas the score from another institute was 123.3. Our participants' overall mean score came out to be 116.62 [11]. It has been demonstrated that empathy, a component of emotional intelligence, improves patient outcomes in healthcare. According to Bertram K. *et al.*, there is a correlation between emotional intelligence and empathy, and women score higher on emotional intelligence and empathy assessments than men do [15]. Medical students frequently experience stress, therefore having strong emotional intelligence can help them manage it. Foster K., reported similar findings in their research on pharmacy, dentistry, and nursing students, where they discovered a negative relationship between perceived stress and emotional intelligence (EI) [16]. Doyle NA *et al.*, likewise noted the same outcomes [17] A further study conducted on Swedish medical students [18] found that those in the

25–29 age range exhibited higher levels of emotional intelligence; this finding may be related to Sweden's later start date for medical schools. The majority of participants (59.8%) exhibited medium emotional intelligence, whereas 38.5% demonstrated high emotional intelligence. Similar findings were noted in a Saudi Arabian study [19], where the majority of pupils (73.4%) had average EI. According to Ewaiwe B *et al.*, students studying basic medical science had greater emotional intelligence compared to their clinical medicine counterparts [20]. We saw similar results, with a greater mean emotional intelligence among basic science students. The strengths of the study lie in the large sample size, enhanced reliability and generalizability by using a well-validated data collection instrument (Schutte Self-Report Emotional Intelligence Test) and including public and private sector medical colleges to increase sample diversity. The articulation of the learning processes in terms of different academic years further enables the study of EI across various stages of medical education. The limitations include that the data have a subjective bias because they are self-reported and, secondly, the design is cross-sectional; therefore, no causal inferences can be drawn. It is a non-probability sampling by convenience that might reduce generalizability in results, and lastly, there are black-robed cultural variations present at Peshawar, Pakistan, which may impact the finding. It may alter its application from other places.

CONCLUSIONS

It was concluded that the majority of undergraduates had an average degree of emotional intelligence. It was also noted that there was a statistically significant difference in the mean emotional intelligence scores of the genders, with men scoring higher than women. Furthermore, it should be noted that there was no statistically significant difference between the basic science and clinical science groups and that students studying basic sciences had higher mean scores than clinical science students.

Authors Contribution

Conceptualization: SZ, KK
Methodology: SZ, KK, MZ, ASK, SM
Formal analysis: SZ, KK, MK, KA, MS, AAK, SM, ASK, ZM
Writing-review and editing: SZ, KK, MK, MZ, KA, MS, AAK, ZM

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

Conflicts of Interest

The authors declare no conflict of interest.

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