ORIGINAL ARTICLE

Assessing Emotional Intelligence Among Future Health Care Professionals; A Cross-Sectional Study in Sialkot, Pakistan

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ABSTRACT

Objective: To assess emotional intelligence among future healthcare professionals.

Study Design: Descriptive cross-sectional.

Place and Duration of Study: This study was conducted at the Department of Community Medicine, Sialkot Medical College Sialkot, Pakistan from 23rd August 2023 to 23rd November 2023.

Methods: The study was carried out in Sialkot Medical College. A convenient sampling technique was employed to select participants. The inclusion criteria were students enrolled in the first through the final year of the MBBS program. The exclusion criteria were any medical students who had been diagnosed with anxiety or depression disorders, as these conditions could potentially influence their emotional intelligence scores. Data was collected through an Emotional intelligence scale questionnaire disseminated via Google Forms. SPSS Version 23 was used to analyze data; *P*-value of less than 0.05 is considered statistically significant.

Results: This study enrolled 298 medical students, with a mean age of 20.4 ± 1.77 years, comprising 143 (48%) males and 155 (52%) females. In the emotional awareness domain, females scored higher (29.9 ± 3.3) than males (24.4 ± 2.9), with a significant difference (*P* = 0.042). Conversely, in emotional management, males scored higher (32.8 ± 3.1) than females (26.6 ± 2.9), also significant (*P* = 0.002).

Conclusion: This study revealed gender-specific differences in specific domains of emotional intelligence among medical students, yet found consistent levels of overall emotional intelligence across both genders and throughout different academic years. These findings suggest the need for targeted interventions to address these disparities and underscore the stability of emotional intelligence in the medical education context.

Keywords: *Emotional Intelligence, Health Care Professionals, Medical Students.*

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Introduction

Emotional intelligence (EI) is defined as the capacity to perceive, understand, manage, and regulate emotions in oneself and others. It involves key competencies such as self-awareness, empathy, self-regulation, and social skills, which are essential for effective communication, relationship building, and emotional resilience.[1] As a multi-dimensional construct, EI has been widely studied across disciplines and is recognized as critical for both personal and professional success.[2] Within healthcare, EI is particularly relevant, as it supports the ability to interact empathetically

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with patients, manage stressful situations, and work cohesively within a team. However, while the role of EI in improving patient care and reducing burnout is well documented among practicing healthcare professionals, research exploring EI among medical students, especially in regions such as Pakistan, remains limited.[3]

Medical students experience numerous stressors throughout their education, from rigorous academic demands to the emotional challenges of interacting with patients.[4] These stressors can significantly impact students' mental health and overall well-being, often leading to issues such as anxiety, depression, and burnout. The development of EI during medical education could serve as a protective factor, helping students to better manage these challenges, cope with stress, and ultimately perform more effectively in their future roles as physicians.[5] High EI levels have been associated with improved mental health, greater academic success, and a stronger ability to handle interpersonal relationships — all essential attributes for medical professionals who regularly encounter high-stakes situations that require emotional resilience and empathy. In this context, fostering EI could serve as a foundational aspect of medical training, supporting both students' academic performance and long-term professional development.[5]

In healthcare, professionals with high EI are more adept at building trust with patients, responding empathetically to their needs, and managing complex emotions that arise in medical practice.[6] Studies suggest that patients perceive healthcare providers with high EI as more compassionate, understanding, and attentive, which can enhance patient satisfaction and compliance with treatment plans. Furthermore, EI has been shown to enhance teamwork and collaboration among healthcare providers, reducing conflicts and fostering a supportive environment.[6] Given the collaborative nature of healthcare, in which doctors, nurses, and other professionals work closely to provide comprehensive care, the ability to understand and manage emotions is essential for ensuring a cohesive and effective team dynamic.[7,8]

Despite the benefits of EI in healthcare, there is a notable gap in EI-focused education and training within medical curricula, particularly in Pakistan. Medical education often prioritizes cognitive and technical skills, with limited emphasis on developing students' emotional and interpersonal abilities.[9] This narrow focus may leave students ill-prepared to handle the emotional demands of clinical practice, increasing their risk of burnout and impairing their ability to provide compassionate care. Furthermore, cultural factors may influence the way EI is expressed and perceived, underscoring the need for contextually relevant research. In many cultures, including Pakistan, emotional expression may be more restrained, and students may face societal expectations to prioritize academic achievement over emotional growth. Exploring EI within this cultural context can provide valuable insights into the unique challenges faced by Pakistani medical students and inform the development of interventions tailored to their needs.[9]

While there has been some research on EI in medical education, findings are mixed, and studies often focus on Western populations. Research in Pakistan and other non-Western countries is sparse, highlighting the need for studies that examine how EI manifests and impacts medical students in diverse cultural settings. The limited available research indicates that female medical students may exhibit higher levels of empathy and emotional awareness than their male counterparts, while male students may excel in emotional regulation.[9] However, these trends vary across studies, and the specific EI profiles of Pakistani medical students remain largely unexplored. Understanding these profiles could help educators develop targeted interventions to address gaps in EI and promote a more balanced, holistic approach to medical education.

In recent years, there has been growing interest

in integrating EI training into medical education. Such training could encompass activities such as reflective practice, mindfulness, and communication skills workshops designed to enhance students' self-awareness, empathy, and interpersonal effectiveness.

This study aims to bridge the gap by examining EI across various domains — including emotional awareness, emotional management, social emotional awareness, and relationship management and assessing how these domains differ between male and female students. By identifying these differences, the study seeks to inform curriculum development in medical education, with the goal of fostering an emotionally intelligent, resilient, and compassionate future healthcare workforce.

This study addresses this gap by exploring EI within a culturally relevant context and examining the implications for medical education. By understanding the EI profiles of Pakistani medical students, educators can develop programs that not only enhance students' academic and clinical performance but also support their emotional well-being, equipping them with the skills to provide high-quality, compassionate care in their future medical careers.

Methods

This study was conducted at Department of Community Medicine, Sialkot Medical College Sialkot, Pakistan from 23rd August 2023 to 23rd November 2023 after getting approval from Ethical Review Committee on dated 23rd August 2023 vide letter no: ERC # MRC/IRB/23019.

The study's sample size was calculated using the Open Epi website calculator, resulting in 298 subjects. This calculation was based on expected outcomes, the medical college's population size, and the desired level of statistical confidence and power. A convenient sampling technique was employed to select participants. This non-probability sampling method efficiently collected data within the specified study period.

The inclusion criteria specified that all students enrolled in the first through final year of the MBBS program were eligible to participate. Conversely, the exclusion criteria were set to omit any medical students who had been diagnosed with anxiety or depression disorders, as these conditions could potentially influence their emotional intelligence scores. Additionally, students who were not willing to participate in the study were excluded.

Data was collected through a questionnaire disseminated via Google Forms, ensuring a wide reach and easy accessibility for participants. The questionnaire used was previously developed and validated in a study conducted in Chennai, India[11]. Permission to use this questionnaire was obtained from the original authors, ensuring ethical integrity in instrument utilization. This questionnaire is designed to assess various dimensions of emotional intelligence, including self-awareness, self-regulation, social skills, empathy, and motivation, with the scoring system set such that 40 represents the highest possible score per domain and 20 denotes the average.

The Google Forms link to the questionnaire was shared with students, allowing them to participate at their convenience. Participation was entirely voluntary, with an emphasis on confidentiality and the anonymity of responses to encourage honest and uninfluenced answers.

The participants were also informed about the purpose of the study, its potential benefits, and their right to withdraw at any point without any consequences.

Data collected from the completed questionnaires were analyzed using statistical software. Descriptive statistics were employed to summarize the demographic characteristics of the participants and their responses to the EI questionnaire. Mean scores of EI dimensions were calculated and compared across different academic years to identify any trends or significant differences. Inferential statistics, such as *t*-tests or ANOVA, were used to examine the relationships between EI scores and demographic variables, with a *P*-value of less than 0.05 considered statistically significant.

Results

Table-1 shows that the study enrolled 298

students, the mean age of whom was 20.4 ± 1.77. Among the 298 students who participated in the research, 143 (48%) were males, and 155 (52%) were males. The majority of respondents (48.7%) were in their first study year, followed by a smaller proportion in subsequent years: 9.1% in the second year, 18.1% in the third year, 10.4% in the fourth year, and 13.8% in the fifth year.

Table-2 presents a comparative analysis of different domains of emotional intelligencebetween male and female medical students in the emotional awareness domain,

Table-1: Sociodemographic characteristics of study respondents (n=299)

Variable	Detail	Frequency	Percentage
Age in years	18 to 22	254	84.9
	22 to 26	45	15.1
Gender	Male	143	47.8
	Female	156	52.2
Year of MBBS study	1st year	145	48.5
	2nd year	27	9.0
	3rd year	54	18.1
	4th year	32	10.7
	Final year	41	13.7

Table-2: Emotional Intelligence between male and female medical students

Emotional Intelligence	Male	Female	*t*-test	*P*-value
Emotional Awareness (max score = 40)	24.4 ± 2.9	29.9 ± 3.3	1.759	0.042*
Emotional Management (max score = 40)	32.8 ± 3.1	26.6 ± 2.9	.526	0.002*
Social Emotional Awareness (max score = 32)	24.5 ± 2.0	24.7 ± 2.0	-1.008	0.359
Relationship Management (max score = 28	21.2 ± 2.6	21.6 ± 2.0	-1.298	0.208
Total Emotional intelligence (max score = 140)	102.9 ± 6.4	102.8 ± 5.5	.329	0.756

**P<0.05 was considered significant using independent samples t-test*

female students scored significantly higher (M = 29.9, SD = 3.3) than male students (M = 24.4, SD = 2.9), with a *P*-value indicating statistical significance (*P* = 0.042). Similarly, in the emotional management domain, male students scored significantly higher (M = 32.8, SD = 3.1) than female students (M = 26.6, SD = 2.9), with a statistically significant difference (*P* = 0.002).

Table-3 provides a comparative analysis of different domains of emotional intelligence among medical students across different years of study. Mean scores, with standard deviations, are reported for each domain of emotional intelligence, and the associated *P*-values indicate the significance of differences between the different years of study. In the emotional awareness domain, there were no significant differences observed across the different years of study (*P* = 0.442), with mean scores ranging from 23.8 to 24.7. Similarly, in emotional management, social emotional awareness, and relationship management, no statistically significant differences were found among the different years of study (*P* = 0.329, *P* = 0.183, *P* = 0.822, respectively). Mean scores remained relatively consistent across the different years.

Table-3: Emotional Intelligence among different year of study in medical students

Emotional Intelligence	1st year	2nd year	3rd year	4th year	5th year	*f*-statistic	*P*-value
Emotional Awareness (max score = 40)	23.8 ± 2.6	24.2 ± 3.2	24.6 ± 3.4	24.7 ± 4.3	24.0 ± 3.2	0.60847	0.442
Emotional Management (max score = 40)	26.6 ± 3.0	27.7 ± 3.3	26.4 ± 3.1	27.2 ± 3.1	26.7 ± 2.5	3.64309	0.329
Social Emotional Awareness (max score = 32)	24.3 ± 2.0	25.1 ± 2.3	24.4 ± 2.3	24.9 ± 1.7	24.9 ± 1.7	0.95515	0.183
Relationship Management (max score = 28)	21.3 ± 2.3	21.5 ± 2.5	21.7 ± 2.6	21.5 ± 2.2	21.6 ± 2.3	0.92069	0.822
Total Emotional intelligence (max score = 140)	96.0 ± 5.4	98.5 ± 7.1	97.1 ± 6.6	98.3 ± 5.6	97.2 ± 6.0	1.8308	0.127

**P<0.05 was considered significant using One Way ANOVA*

Furthermore, the total emotional intelligence scores also did not significantly differ among the different years of study ($P = 0.127$).

Discussion

The study aimed to assess emotional intelligence among future healthcare professionals involving 298 students across various years of study. The findings reveal nuanced insights into the emotional intelligence (EI) profiles of medical students, with some statistically significant differences between genders in specific domains. The significant differences observed in the domains of emotional awareness and emotional management between male and female students underscore gender-related variations in emotional processing and regulation. Female students exhibited higher scores in emotional awareness, which aligns with a body of research suggesting that women tend to be more attuned to emotions and more adept at identifying and expressing them. This could be attributed to a combination of socialization processes, biological factors, and gender norms that encourage emotional expressivity among females. Conversely, male students scored higher in emotional management, which may reflect societal expectations for males to exert control over emotional expressions, a skill that could be interpreted as emotional regulation or

suppression depending on the context. This finding contributes to the ongoing discussion about how gender roles and expectations influence the development and expression of emotional intelligence.[10,11]

In the current study result the absence of statistically significant differences in EI scores across different years of study suggests that the development of emotional intelligence among medical students remains relatively stable throughout their education. This stability might indicate that the medical curriculum, as it is currently designed, does not significantly influence the development of emotional intelligence skills.[12] Alternatively, it could suggest that the intrinsic emotional intelligence of students does not dramatically change with exposure to medical education alone. Several factors could contribute to the observed lack of significant differences. The Traditional medical curricula may not explicitly target the development of emotional intelligence skills, focusing more on cognitive and technical competencies.[12,13] This oversight could explain why progression through medical school does not appear to enhance EI. The characteristics of individuals attracted to the medical profession might include a certain level of emotional intelligence necessary for patient care, leading to a selection bias where individuals with similar EI profiles are admitted to medical school.[14] The tools used to measure emotional intelligence may not be sensitive enough to detect subtle changes over time, or the changes in EI may require longer periods to manifest significantly.

The lack of statistically significant differences in some domains of emotional intelligence, both across genders and study years, might be explained by several factors, while the sample size was calculated to ensure adequate power, the actual differences in emotional intelligence might require a larger sample to detect, especially if the variations are subtle. The student population at Medical College may be relatively homogeneous in terms of cultural and educational backgrounds, potentially minimizing the variability in emotional intelligence scores. The development of emotional intelligence is influenced by a complex interplay of personal, educational, and social factors. The cross-sectional design of this study captures a single point in time, which may not fully reflect the dynamic nature of EI development.

The findings underscore the need for medical education to address the development of emotional intelligence explicitly. Integrating EI training into the curriculum could enhance students' ability to manage their emotions, relate to others, and navigate the complex social interactions inherent in healthcare settings. Such training could be particularly beneficial in improving patient care, reducing professional burnout, and fostering effective teamwork among healthcare professionals.

Workshops on emotional intelligence are desperately needed in Pakistani medical colleges and hospitals to improve the doctor-patient connection. Currently, there is a lack of emphasis on emotional intelligence training within the medical curriculum, potentially leaving doctors with gaps in their ability to connect with and comprehend their patients on an emotional level. Medical schools and hospitals may provide doctors with the skills they need to negotiate the emotional intricacies of patient interactions by hosting courses on emotional intelligence development. Self-awareness, self-management, compassion, and appropriate interaction must be addressed in such sessions. By honing these abilities, clinicians may better manage their emotions, comprehend their patients' points of view, and communicate with empathy and clarity. Improved emotional intelligence in doctors will enhance trust, cooperation, and patient happiness, resulting in better healthcare outcomes.

Workshops on emotional intelligence can help the PMDC by raising professional standards, improving doctor-patient interactions, reflecting worldwide best practices, boosting professional competence, and improving the healthcare sector's reputation in Pakistan.

Conclusion

This study contributes valuable insights into the emotional intelligence of future healthcare professionals, highlighting areas of strength and opportunities for growth. The findings suggest that while medical students display certain emotional intelligence competencies, there is a substantial room for curriculum enhancements to foster EI development, potentially benefiting both healthcare providers and recipients.

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Authors Contribution

HS: Idea conception
SR: Study designing
SZ: Data collection
NY: Data analysis, results and interpretation
SI: Manuscript writing and proofreading
QA: Manuscript writing and proofreading