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Assessing The Relationship Between Dental Practitioners' Empathy And Emotional Intelligence In A Public Institute. A Cross-Sectional Study

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Abstract

Objective: The purpose of the study is to determine the relationship between empathy and emotional intelligence among dental practitioners at a public institute in Karachi.

Method: A cross-sectional study was conducted at Karachi Medical & Dental College from January 2023 to August 2023.

For this study, we targeted 250 active dental practitioners that including fresh dental graduates, dental consultants and postgraduate residents. Data collection tools used in this study were the HP (Health Professionals) version of the JSPE scale and Schutte's Emotional Intelligence Scale (SEIS). SPSS 2 with Mann-Whitney U Test, Kruskal-Wallis Test, one ANOVA and Pearson correlation was applied to test the hypothesis.

Results: Out of 250 targeted participants, 224 responses were received (response rate 89.6%). Mann-Whitney U Test and the Kruskal-Wallis test showed a statistically significant relation between empathy with gender and dental practitioners stratified according to qualification, with a p value of 0.044 and 0.012, respectively. Pearson correlation test showed a moderate correlation between empathy and emotional intelligence of dental practitioners an R-value of 0.0682.

Conclusion: This study found significant variation in empathy by gender, qualification, and occupation of the participant, while EI only differed between occupations. The finding in this study supports the inclusion of emotional competency training in dental education, primarily focused on providing better patient-centred and dental care for our patients.

Contributions:

AS, RA, SS - Conception, Design
RA, NA, QS - Acquisition, Analysis, Interpretation
RA, NA - Drafting
AS, RA, SS, QS - Critical Review

All authors approved the final version to be published & agreed to be accountable for all aspects of the work.

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Keywords: Empathy, emotional intelligence, dentistry, dentists, education.

Introduction

The value of the relationship between doctors and their patients has long been recognised in the field of medicine. Physicians who connect with patients with hospitality are viewed as more effective than those who maintain formalities in their interactions.¹ A variety of elements influence the doctor-patient interaction, some of which are subjective (such as emotions and perceptions) and others of which are objective (such as clinical competence and communication skills).² It is critical to recognise that the doctor-patient relationship is not a one-sided affair, as it involves both parties communicating and collaborating to provide treatment that is suited to the individual's requirements. Establishing this connection is essential from both a clinical and a human standpoint, as it encompasses subjective elements that play a role in the patient's recovery.³ Empathy is said to be one of the important components, which is a psychological phenomenon that indicates an individual's capacity to comprehend the emotions of others and react compassionately to their distress.⁴ This complex psychological inference approach provides perspectives on the emotions and thoughts of others by drawing on observation, memory, knowledge, and reasoning. It provides the optimal chair-side approach that promotes understanding and is commonly associated with a good relationship with patients.⁵

The key elements of clinical empathy involve understanding the patient's concerns, past interactions with the physician, and previous illnesses or symptoms, and adeptly conveying this information to the patient. Clinical compassion enhances the standard of dental care.⁶ Empathy may tremendously motivate and inspire patients to improve how well they adhere to their dental regimens and feel about their treatment, decreasing medical burnout, strengthening physician-patient interactions, and improving physicians' professional satisfaction.⁷ Conversely, emotional intelligence (EI) refers to the capacity to recognise, interpret, and manage both one's own emotions and the emotions of others. It has been found to promote healthy interpersonal connections, psychological health, interpersonal interaction, stress tolerance, and an increase in motivation and positive workplace attitudes.⁷ It is essential for successful practice, supporting both professional practice and one's mental health in the fields of nursing, medicine, dentistry, and other health care. There may be a correlation between many behaviors that characterise great professional practice in the healthcare sector and underlying EI-related skills.⁸

It is a cognitive ability that dentists can cultivate in themselves and enhance over time, benefiting their therapeutic practices as it helps the doctor to make precise diagnoses in stressful environments and establish a pleasant doctor-patient relationship by reducing the patient's anxiety. It has been reported that patients are more inclined to return to a dentist who exhibits higher emotional intelligence.⁹

Numerous global studies have been undertaken to evaluate emotional intelligence and empathy among dental students, hygienists, and practitioners.¹⁰⁻¹² In Pakistan, there is a scarcity of information about empathy and

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emotional intelligence among dental practitioners. As a result, the objective of this study was to assess the relationship between dental practitioners' empathy and emotional intelligence in one of the public dental institutes in Karachi.

There is an association exists between empathy and emotional intelligence among dental practitioners in a public dental institute in Karachi.

Materials And Methods

For this research study, we adopted a cross-sectional study design. It was conducted at a public dental institute, Karachi Medical & Dental College, from January 2023 to August 2023. The sampling technique used was universal sampling as we targeted a complete 250 active dental practitioners of the public institute of Karachi. The participants included BDS fresh graduates, dental consultants and postgraduate residents. Among them were full-time academicians or both practitioners + academicians. The study includes dental practitioners who gave consent to participate and were available in the dental institute. We excluded participants who failed to complete the questionnaires, those who did not provide informed consent, and dental practitioners who were unavailable during the data collection period.

The following Data Collection Tools were used in this study: a. HP (Health Professionals) version of the Jefferson Scale of Physician Empathy (JSPE).¹³ As annexure A to assess empathy and b. Schutte's Emotional Intelligence Scale (SEIS).¹⁴ Annexure B is used to assess emotional intelligence.

A questionnaire was emailed to all the participants by the principal investigator. The questionnaire had a section of demographic details of participants, which included name (optional), age, gender, qualification, occupation and number of years of work experience. The questionnaire was adapted for use by dentists by substituting the words 'physician' and 'doctor' with 'dentist', and the word 'medical' with 'dental'. The other sections were based on two data collection instruments.

Approval was obtained from the IRB of the public dental college of Karachi with reference number 58. Voluntary consent was obtained from every participant after thoroughly describing the study and also giving them the option to withdraw from participation if they intended to do so. The participants were assured that the information would be kept completely confidential.

The data was compiled and statistically analysed using software SPSS version 22. Pearson's correlation test was done to find out the correlation between mean JSPE scores and SEIS scores. To compare the median JSPE scores and median SEIS scores between males and females Mann-Whitney U-test was used. Comparison of mean JSPE and SEIS scores on the data (stratified based on the qualification and occupation) was done using the Kruskal-Wallis Test, whereas one-way ANOVA was applied for occupation-based data. A statistically significant p-value of 0.05 was considered.

Results

For this study, we targeted 250 active dental practitioners from a public institute in Karachi, out of which 224 responses were received (response rate 89.6%). Table 1 shows the comparison of EI and empathy scores with gender, using the Mann-Whitney U test. For empathy, the median JSPE scores were 65 in males and 63 in females, respectively. This difference was statistically significant with a p-value of 0.044. For EI, the median SEIS scores were 120 and 118.5 in males and females, respectively. This difference was statistically not significant with a p-value of 0.391.

Table 1: Comparison of Empathy & EI in different genders

Scale	Gender	N	Median	IQR	p value
JSPE	Male	43	65	7	0.044
	Female	181	63	7	
SEIS	Male	43	120	11	0.391
	Female	181	118.5	14.00	

*Mann-Whitney U test applied *Significant at p-value <0.05

Table 2 shows the comparison of EI and empathy scores based on qualification using the Kruskal-Wallis test.

For empathy, the mean JSPE scores were 62.00, 66 and 58 for dental practitioners qualified as BDS, consultants and postgraduate students, respectively. Since the consultants had a higher mean score, the differences were statistically significant with a p-value of 0.012.

For EI, the mean SEIS scores were 118, 120 and 123 for dental practitioners qualified as BDS, consultants and postgraduate students, respectively. These differences were statistically insignificant with a p-value of 0.367.

Table 2: Comparison of Empathy & EI based on qualification

Scale	Qualification	N	Mean±S.D	p value
JSPE	BDS	138	62.00±5.00	0.012
	Consultant	57	66±6.00	
	Postgraduate student	29	58±7.00	
SEIS	BDS	138	118±13.00	0.367
	Consultant	57	120±14.00	
	Postgraduate student	29	123±16.00	

*Kruskal-Wallis test applied *Significant at p-value <0.05

Table number 3 shows the comparison of Empathy and EI based on occupation by applying the one-way ANOVA test.

For empathy, the mean JSPE scores were 83.66, 83.70, 84.41 and 86.00 among academicians, private practitioners, PG students and both (academician + private practitioners), respectively. These differences were statistically significant with a p-value of 0.035.

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For EI, the mean SEIS scores were 121.66, 118.74, 120.06 and 130.00 among academicians, private practitioners, PG students and both (academician + private practitioners), respectively. These differences were also statistically significant with a p-value of 0.046

Table 3: Comparison of Empathy & EI based on occupation

Scale	Qualification	N	Mean ± SD	F value & p value
JSPE	Academician	119	83.66 ± 5.250	
	Private practitioner	56	83.70 ± 3.291	2.91&
	PG student	36	84.41 ± 4.515	0.035
	Both academician and private practitioner	13	86.00 ± 10.863	
SEIS	Academician	119	121.66 ± 11.826	
	Private practitioner	56	118.74 ± 10.658	2.71&
	PG student	36	120.06 ± 12.632	0.046
	Both academician and private practitioner	13	130.00 ± 16.401	

*One-way ANOVA test applied *Significant at p-value <0.05

Table 4 shows a moderate correlation between empathy and emotional intelligence by applying the Pearson correlation test. An r-value of +0.068 was obtained, indicating a moderate positive relationship, although it was not statistically significant, with a p-value of 0.31.

Table 4: Correlation among Empathy and Eid

Scale	Median	IQR	R value and p value
JSPE	63	7	
SEIS	119	13	0.068, 0.31

*Pearson correlation applied *Significant at p-value <0.05

Discussion

The present study explored emotional intelligence (EI) and empathy among dental practitioners in a public institute in Karachi, with a particular focus on gender, qualification, and occupational roles. Overall, the results demonstrate a significant association between empathy and certain demographic variables, while EI appeared more evenly distributed across groups. Notably, our study found a statistically significant difference in empathy scores between male and female dental practitioners, with males scoring higher than females. This finding is contrary to several studies, such as those by Dyrbye et al., Aye et al., and Geng et al., which reported higher empathy scores in female medical students and professionals.¹⁵⁻¹⁷ However, some literature supports our findings, suggesting that cultural or professional role expectations in certain contexts may influence self-reported empathy levels in men and women differently.^{18, 19}

About EI, gender-based differences were statistically insignificant, aligning with previous studies like that of Shahin et al., who found minimal gender-based variation in EI among healthcare professionals.²⁰ When comparing EI and empathy scores across levels of qualification, consultants showed significantly higher empathy scores compared to BDS and postgraduate students, which may be attributed to greater clinical exposure and patient interactions. This observation is consistent with studies by McNulty et al., indicating that clinical experience tends to enhance empathic abilities.²¹ EI, however, did not show statistically significant variation by qualification, which may reflect that emotional competency develops through broader life experiences rather than formal qualifications alone.

Additionally, occupational roles had a notable impact. Dental practitioners engaged in both academia and private practice had the highest mean empathy and EI scores, with statistically significant differences. This suggests that diverse professional exposure may cultivate both emotional awareness and interpersonal sensitivity, findings echoed by Carminati and Louwen et al., who reported higher emotional intelligence in professionals managing varied work responsibilities.^{22,23} Moreover, the modest yet positive (though non-significant) correlation between empathy and EI ($r = 0.068$, $p = 0.31$) supports the theoretical framework proposed by Silve et al., which posits that EI and empathy are interrelated but distinct constructs.²⁴ Previous studies have similarly observed weak to moderate correlations between the two, emphasising that while emotionally intelligent individuals may be better equipped to empathise, empathy also relies on contextual, cognitive, and affective factors beyond emotional regulation alone.^{25, 26}

These findings have important implications for dental education and professional development. Empathy and emotional intelligence are critical for effective patient-practitioner communication, especially in dentistry, where anxiety and fear among patients are common. Practitioners who exhibit higher levels of empathy are more likely to build trust, improve patient satisfaction, and enhance treatment outcomes. Since consultants and those with dual occupational roles scored higher in both domains, structured mentorship programs and interprofessional collaboration could be valuable tools for enhancing emotional skills among junior practitioners and postgraduate students. Additionally, empathy training workshops and emotional intelligence modules could be incorporated into undergraduate dental curricula to foster these skills early in the professional journey.

Despite the insights gained, this study is not without limitations. Being cross-sectional and limited to a single public institution in Karachi, the generalizability of the findings to the broader population of dental practitioners in Pakistan may be constrained. Self-reported data, especially on emotionally sensitive topics such as empathy and EI, are also susceptible to social desirability bias. Furthermore, the instruments used (JSPE and SEIS) primarily capture trait-level attributes and may not fully reflect situational or behaviorally expressed empathy and EI. Future studies should consider longitudinal designs, qualitative approaches, and a broader geographical scope to validate and extend these findings. Exploring the impact of these emotional competencies on clinical performance and patient feedback would also add practical relevance to the research.

Conclusions

Empathy was found to be significantly determined by gender and educational qualifications; women and consultants exhibited higher levels of empathy. While EI was not significantly influenced by gender or qualifications, both EI and empathy were at their highest when the practitioner's occupation combined academia and private practice. A weak positive correlation between empathy and EI was noted, indicating a weak but relevant relationship between the two constructs. These findings highlighted developing emotional competencies alongside clinical competencies. Empathy and EI training in the dental curriculum would have some benefit, especially in undergraduate studies, as there are studies that demonstrate declining empathy due to academic rigours. Creating a socially supportive learning environment with good mentoring and early clinical exposure for developing empathy and EI is also recommended. While empathy and EI are not the only determinants of successful dental practice, they are important facets of dental care and practice, given that they help establish trust, promote patient satisfaction, as well as develop professionals who are ethical and reflective.

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