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# Emotional Intelligence of Dental Practitioners and the Perceived Quality of Treatment Delivered to Pediatric Patients in Saudi Arabia

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## ABSTRACT

**Background:** The ability to recognize and understand one's own emotions as well as those of others is referred to as emotional intelligence (EI). Building a strong doctor-patient relationship is greatly aided by EI. More effective than those who conduct patient consultations in a strictly official manner are the clinicians who adopt a warm, friendly, and reassuring tone.

**Objective:** The present study was conducted to assess EI of dental practitioners and the perceived quality of treatment delivered to pediatric patients with respect to their parents' perspective in Saudi Arabia.

**Materials and Methods:** A self-administered well-structured questionnaire, containing different questions reflecting EI of the dental practitioner, was asked from 416 parents of pediatric patients. It includes socio-demographic details; questions reflecting dentist's behavior, skills, and treatment management given to the child (patient). EI score was recorded using "five-point-Likert-scale." The responses to the questionnaire were randomly picked from various government hospitals and private clinical settings involving Saudi dental practitioners with different professional levels. The data collected was subjected to statistical analysis using the IBM Statistical Package for the Social Sciences version 20.0 software at a significance-level, $P < 0.05$.

**Results:** Mean EI score was significantly ($P < 0.05$) more in females (135.66); Saudi (133.98) dentists; and those working in Government (135.49) setups. A statistically significant relationship ($P < 0.05$) was observed with respect to the recommendation of the dentist; and his communication skill with the EI score. EI scores were significantly ($P < 0.05$) more in relation with understanding the diagnosis and oral hygiene instructions; motivation to continue the treatment; and visits to the same dentist. Mean EI scores were comparable in relation to different age groups, showing an insignificant statistical-difference ($P > 0.05$).

**Conclusion:** Irrespective of position, dental practitioners in Saudi Arabia showed adequate EI levels for effective management of pediatric patients of all age groups.

**Keywords:** Dental practitioners, emotional intelligence, pediatric patients, Saudi Arabia

## Introduction

One of the most important aspects of dental care is the interaction between the patient and the dentist. A dentist's emotional intelligence (EI) and empathy are two essential components for creating positive relationships between patients and clinicians.[1] The ability to recognize and understand one's own emotions as well as those of others is known as EI. This ability involves controlling and modifying one's own emotions to adjust to challenging or stressful circumstances.[2]

To establish a strong doctor-patient relationship, both empathy and EI are crucial. It is true that physicians who conduct patient consultations in a pleasant, comforting manner are more successful than those who maintain a purely professional approach. The main elements of clinical empathy are comprehending the patient's complaint, past interactions with physicians, and prior

illnesses or symptoms, and effectively conveying this understanding to patients.[3] It is referred as "reasoning which takes emotions into account."[4] EI should be included in dental education starting at the student level since certain fundamental emotions are important in the workplace for dentists, patients, and hospital employees.[5,6]

People who perform well in EI assessments are more likely to have a strong sense of self-worth, succeed professionally, and show excellent leadership and management abilities.[6] Patients, hospital employees, and dentists are among the healthcare workers who contribute significant emotions to the workplace. EI may play a major role in determining whether those feelings improve the practice or cause interpersonal problems. Emotional skills must be used appropriately in addition to technical abilities to provide high-quality dental care in a safe and effective manner and to help the kid develop healthy dental attitudes.[7]

A higher EI would allow dentists to effectively use their EI to establish and maintain strong bonds with the child and their parents, as well as the rest of the dental team. More research is required to determine how EI might help dentists guide the behavior of the young patients, build trust, and reduce anxiety and terror. There is a lack of information regarding EI among Saudi Arabian dentists. Thus, the present study was conducted to assess EI of dental practitioners and the perceived quality of treatment delivered to pediatric patients with respect to their parents' perspective in Saudi Arabia.

## Materials and Methods

The present descriptive cross-sectional observational study was carried out on 416 parents of pediatric patients aged 1–15 years, including both girls and boys. Children attending private clinics and government hospitals in different regions of Saudi Arabia were selected using convenience sampling. The study was conducted during the time period from March 2024 to August 2024. The self-administered well-structured questionnaire was framed and used to analyse the socio-demographic variables, EI of dental practitioners, and the quality of treatment delivered to pediatric patients in Saudi Arabia. The validity of the questionnaire was evaluated and revealed to be suitable ($\alpha = 0.85$). The study was done in accordance with the Declaration of Helsinki and was accepted by the Institutional Review Board (IRB/KKUCOD/ETH/23-24/037). An informed written consent was taken from parents or guardians of all the children before enrolling them in this study.

The questionnaire was manually handed or electronically sent to the parents or guardians of pediatric patients after the completion of dental treatment. Those parents who were willing to participate in the study and whose children belonged to the age range of 1–15 years were included and the parents of sub-normal pediatric patients were excluded from the study. The questionnaire contained different questions reflecting EI of the dental practitioner from the perspective of parents or guardians of patients, on the basis of "Schutte's Emotional Intelligence Scale" (SEIS). The SEI scale was originally developed in 1998[8], and the same scale (SEIS) has been used on the Saudi Arabia population by previous researchers.[1] The validity of the questionnaire was tested by three professionals of Pediatric Dentistry and one community health professional, and corrections were made according to their suggestions. Two experts were English-speaking and the other two were Arabic-speaking. A pilot test was conducted to check if the questions were comprehended well by the parents of the patients. The Cronbach's Alpha was used to assess the internal reliability of the questionnaire and it was found to be good with an alpha value equal to 0.80.

The questionnaire includes the socio-demographic details of participants or parents; a section of questions reflecting the potential to pursue a full treatment plan, or for follow-up visits; a complete understanding of comprehensive oral hygiene instructions that the parents received; and questions reflecting the dentist's behavior, skills, and treatment management given to the child (patient).

EI score was recorded using a five-point-Likert-scale, with total score for each participant ranging from 33 to 165. For each question, five represents the highest score and one represents the lowest score. Higher scores represent more EI behavior of dental professional from a parent/guardian's perspective.

The data collected was subjected to statistical analysis using IBM Statistical Package for the Social Sciences version 20.0 software at a level of significance $P < 0.05$. Frequencies and percentages were computed for descriptive statistics. Independent *t*-test and Analysis of Variance statistical analysis was done for assessing the relation of EI with the profile of the dentist; and knowledge and awareness of parents.

## Results

A 100% response rate was observed for the questionnaire. Out of a total of 416 pediatric patients, a maximum of 35.1% were 7–9 years old, showing female predominance (66.3%). 71.9% patients were treated by Saudi dentists, 52.2% being treated in a government setup, mainly by a general dentist (45.4%). Around 90% patients were satisfied with their dentists, 87.5% were willing to visit again, and 84.6% wanted to recommend their dentist to family and friends. 89.4% found that their dentist has good communication skills. Although 65.4% visited a dentist for the 1st time, but more than 85% patients and their parents revealed that they have a full understanding of the diagnosis/treatment plan delivered by the dentist; and also understood oral hygiene instructions being delivered by the dentist. 88% patients were motivated to continue their planned treatment [Table 1]. 90.6% of the patients' parents were satisfied with the behavior management skills of the dentists [Graph 1].

Parents' responses revealed consistently positive perceptions of their dentists' EI across multiple domains. Most parents agreed that their dentists chose appropriate moments to discuss treatment issues and were able to speak openly about any obstacles encountered during dental care. The majority of respondents expressed strong confidence and trust in their dentist's professional abilities and felt comfortable sharing concerns or confiding in them. Although a small proportion indicated that some dentists occasionally struggled to interpret non-verbal messages, most parents felt that their dentist was generally perceptive of emotional cues and sensitive to patients' needs [Table 2].

More than three-quarters of participants reported that their dentist demonstrated good self-awareness and control over emotions, maintaining calm, composed, and reassuring communication with children throughout treatment. Most parents perceived their dentist as optimistic and motivated by positive outcomes, capable of maintaining a constructive attitude, and using good mood to overcome challenges in clinical situations [Graph 2]. Approximately four-fifths believed their dentist could accurately recognize emotions through facial expressions or tone of voice and was able to share and understand patients' feelings, reflecting high empathy and social-awareness.

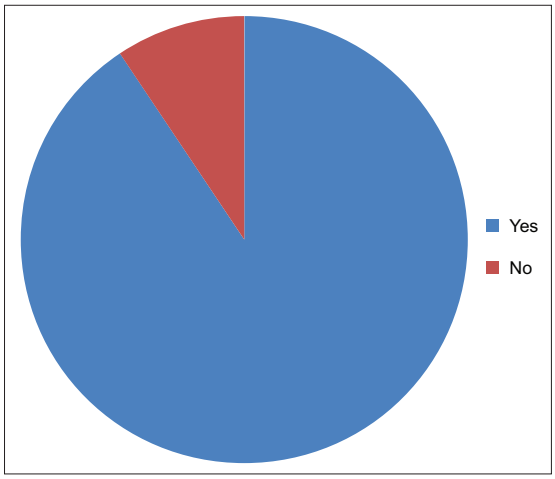
**Table 1: Response to questionnaire**

| Questionnaire | Frequency (*n*=416) | Percentage |
|---|---|---|
| How old is your child? (in years) | | |
| 1–3 | 43 | 10.3 |
| 4–6 | 86 | 20.7 |
| 7–9 | 146 | 35.1 |
| 10–12 | 64 | 15.4 |
| 13–15 | 77 | 18.5 |
| Is your dentist male or female? | | |
| Female | 276 | 66.3 |
| Male | 140 | 33.7 |
| Is your treating dentist Saudi? | | |
| No | 117 | 28.1 |
| Yes | 299 | 71.9 |
| Is it a private or a governmental clinic? | | |
| Government | 217 | 52.2 |
| Private | 199 | 47.8 |
| What is your dentist's position/ educational level? | | |
| Consultant | 35 | 8.4 |
| Dental intern | 61 | 14.7 |
| Dental student | 39 | 9.4 |
| General dentist | 189 | 45.4 |
| Specialist | 92 | 22.1 |
| Are you satisfied of the dentist's behavior management skills? | | |
| No | 39 | 9.4 |
| Yes | 377 | 90.6 |
| Do you think you will come again to the same dentist (if you had the chance)? | | |
| No | 52 | 12.5 |
| Yes | 364 | 87.5 |
| Do you think that you would recommend the dentist to your friends and relatives? | | |
| No | 64 | 15.4 |
| Yes | 352 | 84.6 |
| Do you think that the dentist has a good communication skill? | | |
| No | 44 | 10.6 |
| Yes | 372 | 89.4 |
| Did you have a full understanding of the diagnosis/treatment plan delivered by the dentist? | | |
| No | 43 | 10.3 |
| Yes | 373 | 89.7 |
| Did you have a full understanding of the oral hygiene instructions delivered by the dentist? | | |
| No | 52 | 12.5 |
| Yes | 364 | 87.5 |
| Do you have the motivation to continue the treatment as it has been planned with the same dentist? | | |
| No | 49 | 11.8 |
| Yes | 367 | 88.2 |
| Is this your first visit for the same dentist? | | |
| No | 144 | 34.6 |
| Yes | 272 | 65.4 |

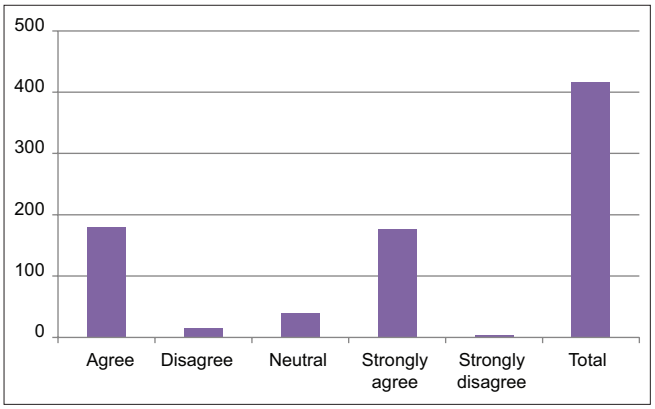
A large majority described their dentist as personable and skilled in communication, able to present themselves well, compliment others appropriately, and create a friendly, supportive atmosphere that made children and parents feel comfortable. Many parents

**Table 2: Emotional intelligence of dental practitioners**

| Question (representative item) | Agree + Strongly agree (%) | Neutral (%) | Disagree+Strongly disagree (%) |
|---|---|---|---|
| Dentist chooses an appropriate time to discuss problems | 78.6 | 14.2 | 7.2 |
| Speaks openly about treatment obstacles | 82.9 | 12.0 | 5.1 |
| Shows confidence and professionalism | 88.7 | 7.5 | 3.8 |
| Understands non-verbal messages | 46.0 | 19.7 | 34.3 |
| Recognizes and controls own emotions | 81.1 | 14.2 | 4.7 |
| Optimistic and expects favorable outcomes | 85.5 | 9.6 | 4.8 |
| Shares emotions and empathizes with others | 77.9 | 20.7 | 1.4 |
| Adapts to mood changes with new ideas | 79.8 | 14.2 | 6.0 |
| Presents self positively and complements others | 85.1 | 9.4 | 5.5 |
| Helps people feel better when they are down | 81.2 | 12.7 | 6.0 |




Graph 1: Parents' satisfaction regarding the Dentist's behavior management skills'




Graph 2: Parents' view on considering their child's dentist as optimistic and expecting the most favorable treatment-outcome

observed that their dentist adapted well to changes in a child's mood or behavior, often bringing up new ideas or creative solutions to maintain cooperation and emotional stability during appointments. Respondents also noted that their dentists were proactive in arranging enjoyable experiences for children and promoting positivity within the dental environment, helping reduce fear and anxiety.

Nearly all parents agreed that their dentist helped others feel better when upset and showed genuine concern for patients' emotional states and overall well-being. Collectively, these findings suggest that the majority of pediatric dental practitioners demonstrated high levels of EI, marked by empathy, optimism, adaptability, and strong communication skills, which together fostered trust and satisfaction among both children and their parents.

Mean EI score was 132.464 ± 17.633 [Table 3]. Mean EI score was significantly ($P < 0.05$) more in females (135.66) as compared to males (126.16 and more in dentist working in Government set-ups (135.49) than in private (129.17) set-ups. Statistically comparable ($P > 0.05$) EI scores were observed in relation with satisfying behavior of the dentist as well as preference of the dentist. A significant relation ($P < 0.05$) was observed statistically in relation to the recommendation of dentist; and his communication skill with EI score. An insignificant difference ($P > 0.05$) was observed statistically in EI scores in relation to the position of the dentist [Table 4].

EI score was assessed in relation to the knowledge and awareness of parents. EI scores were significantly ($P < 0.05$) more in relation with understanding the diagnosis and oral hygiene instructions; motivation to continue the treatment; and re-visiting the same dentist. Mean EI scores were comparable in relation to different age groups, showing an insignificant difference ($P > 0.05$) [Table 5].

## Discussion

Many studies have revealed different temperamental aspects that are responsible for affecting dental fear with variable behaviors among pediatric patients in dentistry.[9] The goal of pediatric dentistry is to identify and treat childhood dental conditions, which sometimes necessitates understanding and adjusting the behavior and responsiveness to care of the child and family. Thus,

it relates to the concept of comprehending EI, which is rarely studied.[10] The present research is an insight to understand the effect of EI of dental professionals in managing pediatric patients.

**Table 3: Emotional intelligence score**

| Mean | SD | SE | Median | Range | Minimum | Maximum |
|---|---|---|---|---|---|---|
| 132.464 | 17.633 | 0.865 | 132.00 | 99.00 | 66.00 | 165.00 |

SD: Standard deviation, SE: Standard error

Given the complexity of dental practice on a daily basis, empathy and EI are essential components to take into account to promote positive physical and mental healing. SEIS has been used to measure EI in the present research because it has suitable psychometric qualities and includes 33 questions, hence avoiding questionnaire-fatigue.[8,11] It is a self-administered, structured, pre-validated questionnaire wherein the

**Table 4: Emotional intelligence score in relation to the profile of the dentist**

| Variable | Mean | SD | SE | 95% CI | | Mean Difference | *t*-test | *P*-value |
|---|---|---|---|---|---|---|---|---|
| | | | | Lower | Upper | | | |
| Gender | | | | | | | | |
| Male | 126.157 | 17.357 | 1.467 | −12.99 | −6.02 | −9.506 | −5.367 | 0.000* |
| Female | 135.663 | 16.923 | 1.018 | | | | | |
| Nationality | | | | | | | | |
| Saudi | 133.977 | 17.609 | 1.018 | 1.629 | 9.127 | 5.378 | 2.820 | 0.005* |
| Non-Saudi | 128.598 | 17.166 | 1.587 | | | | | |
| Clinic | | | | | | | | |
| Governmental | 135.489 | 17.694 | 1.201 | 2.972 | 9.673 | 6.322 | 3.709 | 0.000* |
| Private | 129.166 | 17.004 | 1.205 | | | | | |
| Satisfying Behavior | | | | | | | | |
| Yes | 132.119 | 17.609 | 0.907 | −9.502 | 2.151 | −3.676 | −1.240 | 0.216 |
| No | 135.794 | 17.744 | 2.841 | | | | | |
| Preference of a dentist | | | | | | | | |
| Yes | 132.379 | 17.454 | 0.915 | −5.823 | 4.466 | −.678 | −0.259 | 0.796 |
| No | 133.058 | 19.005 | 2.636 | | | | | |
| Recommending dentist | | | | | | | | |
| Yes | 135.321 | 16.069 | 0.856 | 14.209 | 22.932 | 18.571 | 8.371 | 0.000* |
| No | 116.750 | 17.687 | 2.210 | | | | | |
| Communication skill | | | | | | | | |
| Yes | 134.610 | 16.293 | 0.844 | 20.292 | 15.119 | 25.465 | 7.710 | 0.000* |
| No | 114.318 | 18.258 | 2.752 | | | | | |
| Position of a dentist | | | | | | | | |
| Student | 132.285 | 17.891 | 1.184 | 129.9503 | 134.6199 | | F-coefficient is 1.777; *P*-value is 0.151 | |
| Intern | 135.672 | 16.374 | 2.096 | 131.4784 | 139.8658 | | | |
| Specialist | 132.815 | 17.630 | 1.838 | 129.1640 | 136.4664 | | | |
| Consultant | 127.114 | 17.441 | 2.948 | 121.1228 | 133.1058 | | | |

* indicates statistically significant (*P*-value < 0.05)

**Table 5: Emotional intelligence score in relation to knowledge and awareness of parents**

| Variable | Mean | SD | SE | 95% CI | | Mean Difference | t-test | *P*-value |
|---|---|---|---|---|---|---|---|---|
| | | | | Lower | Upper | | | |
| Understanding of diagnosis | | | | | | | | |
| Yes | 134.528 | 16.674 | 0.863 | 14.728 | 25.215 | 19.970 | 7.484 | 0.000* |
| No | 114.558 | 15.604 | 2.379 | | | | | |
| Understanding of oral hygiene instructions | | | | | | | | |
| Yes | 134.885 | 16.742 | 0.878 | 14.573 | 24.158 | 19.365 | 7.943 | 0.000* |
| No | 115.519 | 14.152 | 1.963 | | | | | |
| Motivation to continue the treatment | | | | | | | | |
| Yes | 134.918 | 16.612 | 0.867 | 15.957 | 25.716 | 20.837 | 8.395 | 0.000* |
| No | 114.082 | 13.883 | 1.983 | | | | | |
| Is this your first visit for the same dentist? | | | | | | | | |
| Yes | 134.754 | 17.325 | 1.050 | 3.096 | 10.134 | 6.615 | 3.695 | 0.000* |
| No | 128.139 | 17.455 | 1.455 | | | | | |
| Age of child (years) | | | | | | | | |
| 1–3 | 130.023 | 14.488 | 2.209 | 125.5642 | 134.4823 | | F-coefficient is 0.907; *P*-value is 0.460 | |
| 4–6 | 132.093 | 16.933 | 1.826 | 128.4614 | 135.7246 | | | |
| 7–9 | 133.746 | 17.899 | 1.481 | 130.8187 | 136.6744 | | | |
| 10–12 | 134.375 | 18.556 | 2.319 | 129.7398 | 139.0102 | | | |
| 13–15 | 130.221 | 18.689 | 2.129 | 125.9789 | 134.4627 | | | |

* indicates statistically significant (*P*-value < 0.05) . SD: Standard deviation, SE: Standard error, CI: Confidence interval

respondents have to read each and every statement and choose from among the options: "Strongly disagree," "disagree," " neutral," "agree," or "strongly agree" for every statement. From the total 33 items in the questionnaire, thirteen items belonged to appraisal and expressions of the emotions, 10 items in the regulation of emotion category, and the remaining 10 items to the utilization of emotion category.[12]

Women are increasingly choosing to pursue careers in dentistry. One of the most significant developments in the dental workforce in recent decades has been the increase in the proportion of women in the field. We found that the mean EI score was significantly ($P < 0.05$) more in female dentists (135.66), thus indicating a more empathetic approach toward children while managing their dental treatment. Similar findings were noticed by Austin *et al*.[13] who also found that females had more EI scores. Duarte *et al*.[14] and Imran *et al*.[15] also found that females show empathy more than males. In contrast to the present study, Shah and Thingujam[16] and Di Lillo *et al*.[17] found no difference between both genders among dental students in showing empathy toward patients.

Understanding the needs and feelings of others is referred to as social awareness or empathy. The ability to comprehend and sympathize with others, the development of other associated competencies, a service orientation, diversity leveraging, and political awareness are key competencies in this EI dimension. This could greatly aid the research participants in understanding the emotions of people from various socio-cultural backgrounds.[7] In the present study, the mean EI score was in a good range (132.464 ± 17.633), showing an empathetic approach, better understanding, and good communication skills of dentists, thus providing a healthy environment for efficient management of patients. We found that good EI scores were observed in relation with satisfying behavior of the dentist; the preference and recommendation of the dentist; and his communication skill. Corah *et al*.[18] and Kulich *et al*.[19] observed that children's cooperation, treatment success, and reduced dental anxiety have all been linked to dentists' empathy, which in turn has raised patient satisfaction.

Social skills are the set of varied skills that are utilized to produce the necessary responses in others. Skills incorporate various items which are related to influence, leadership, collaboration, communication skill, change in catalyst, and team. Sarnat *et al*.[20] and Schouten *et al*.[21] found that the most frequent reason for patient unhappiness in dental practice is the dentist's poor communication, even when the dentist has good technical skills and didactic understanding. Conversely, a dentist with strong social skills can effectively communicate with a patient who is nervous and encourage healthy behavior, particularly in pediatric dentistry. As a result, children experience less worry and are more likely to follow dental advice, which increases patient and dentist satisfaction. In the present study, we also found that EI scores were significantly ($P < 0.05$) more in relation with understanding the diagnosis and oral hygiene instructions; motivation to continue the treatment; and visit for the same dentist.

We observed an insignificant relation of EI score with position of the dentist. This reflects that although experience matters in delivering an efficient treatment, but empathetic approach and good EI of dental professional is necessary for making an efficient relationship with child–patient and delivering the best treatment to him/her, irrespective of the position of the dental professional. Similar to the present study, Gokhale *et al*.[1] also found an insignificant difference in mean scores of EI and empathy among dentists with varied specialties and work-set-ups. In contrast to our study, Anushka *et al*.[22] found that there was a significant difference in relation to the level of empathy shown by dental professionals with different qualifications. They found that, although statistically insignificant, postgraduate students revealed comparatively higher EI and empathy scores. Whereas Sherman *et al*.[23] found that dental students' empathy skills deteriorated from the 1st to the past year of their graduate program.

Assessing and tracking the dental professionals' EI practices is crucial for enhancing clinical practice and patient healing potential. Practicing with low EI might indicate a need to change the healthcare regulations or training programs. Our research showed that EI is critical to long-term patient satisfaction and the doctor-patient relationship. It is clear from the findings of our present study that the goal of dental education in Saudi Arabia is to prepare students to manage patients effectively and cognitively.

## Limitations

As we have assessed the EI of dental practitioners from parents' perspective, it might have compromised the validity of results due to certain bias, such as subjective/reporting bias. Hence, further research needs to be carried out to overcome such a limitation. Self-report scale is prone to certain biases, such as social

desirability effects resulting in exaggerated or fake responses influencing the study results.

## Conclusion

The findings of recent research indicate that EI appears to be sufficient and unaffected by the training or position of dental professionals. In addition, there is a significant association between EI and the dentist's communication skills, recommendations, comprehension of the diagnosis and oral hygiene guidelines, motivation to continue treatment, and repeat visits to the same dentist. Despite being cross-sectional, this study offers valuable information for future investigations into the relationship between EI and stress, as well as outcome measures, including academic achievement and patient behavior, in the context of dentistry education in Saudi Arabia.

## Future Recommendations

It is advised that more long-term observational research be conducted to examine how Saudi Arabian dentists' emotional intelligence affects their treatment of young patients. The correlation design of studies may be conducted in future that would help to limit the subjective bias. The patients' oral health outcomes may be correlated with the dentists' EI through longitudinal research. EI should be included in the dental curriculum so that the dental students get aware about the importance and applicability of EI in their future professional career and hence would prove to be beneficial for the apt oral health care delivery to the patients.

## Conflict of Interest

Authors declare that there is no conflict of interest.

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