

## Emotional Intelligence Subscales: Are They Correlated with Child Anxiety and Behavior in the Dental Setting?

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**Objectives:** The present study aimed at evaluating the correlation between emotional intelligence subscales and child's anxiety and behavior in the dental setting. **Study design:** The study included 123 children aged 7-12 years, who were scheduled to attend two consecutive sessions. In the first session, the Bar-On Emotional Quotient Inventory: Youth Version (Bar-on EQ-I: YV) was administered to participants. The anxiety and behavior in children was evaluated during similar dental procedures in the second session using the Clinical Anxiety Rating Scale and the Frankl scale, respectively. **Results:** 23 children were eliminated from the study, leaving 100 participants (47 boys and 53 girls) with a mean age of  $9.32 \pm 1.59$  years for study. There were statistically significant positive correlations between Frankl score and EQ total score ( $p < 0.001$ ), interpersonal scale ( $p < 0.001$ ), intrapersonal scale ( $p < 0.001$ ), stress management ( $p = 0.03$ ) and adaptability scale ( $p < 0.001$ ). Significant negative correlations were found between anxiety score and, EQ total score ( $p < 0.001$ ), interpersonal scale ( $p < 0.001$ ), intrapersonal scale ( $p < 0.001$ ), and adaptability scale ( $p < 0.001$ ). Anxiety and stress management were not correlated ( $p = 0.16$ ). Total EQ and EQ subscales can predict significance variance of Frankl score ( $p < 0.05$ ) and anxiety score ( $p < 0.05$ ) without confounding effect of age and sex ( $p > 0.05$ ). **Conclusions:** The results provide evidence that children with higher total EQ as well as higher scores of intrapersonal, interpersonal, adaptability and stress management scales can generally be flexible and effective in coping in the dental setting. Higher score in stress management subscale seems to be related to better control over affective information including anxiety compared with other subscales in stressful situations. Overall, they behave and cooperate better than children with lower scores. **Keywords:** Adaptability scale, emotional intelligence, interpersonal scale, intrapersonal scale, stress management.

### INTRODUCTION

Dental anxiety and behavioral problems are commonly encountered in the dental setting.<sup>1</sup> Dental treatment involves many potentially unpleasant stimuli, and the dental office is a stressful place, which all may lead to the development of dental anxiety and behavioral problems particularly in children.<sup>2-4</sup> The children's emotional and behavioral responses in the dental environment are a challenging part of rendering treatment

for the pediatric dentist, as their responses to dental treatment may greatly facilitate or impede the quality and quantity of treatment provided. Furthermore, the reactions of children may indicate their perceptions and attitudes, affecting future propensity to follow preventive routines and to accept restorative care.<sup>3</sup> Dental professionals, in general, have had some difficulty identifying causes that may lead to misbehavior in the dental office, although several variables in children's backgrounds have been related to it.<sup>4</sup>

Many factors may influence a child's response in the dental setting such as cognitive abilities, ability to draw on different coping strategies to help with anxious feelings, and social adaptive abilities, which children use them to respond to usual or daily experiences.<sup>3-6</sup> In addition, emotional intelligence provides new essential information and critical clinical insights into children's emotional and behavioral outcomes. Emotional intelligence refers to an ability to understand, generate, and regulate emotions and is one of the intelligence theories that expand the concept of intelligence to better address the complexities of humans' interactions with their environment.<sup>7</sup> Salovey and Mayer proposed a formal definition of emotional intelligence as "the ability to monitor one's own and others' feelings, to discriminate among them, and to use this information to guide one's thinking and action".<sup>8,9</sup> Emotional intelligence encompasses the ability to regulate emotions in order to "effectively cope with daily demands" as well as the ability to "generate positive affect" to motivate oneself to achieve personal goals.<sup>10</sup> Emotional Quotient (EQ) is a self-report measure of emotionally and socially intelligent behavior, which provides an

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estimate of one's underlying emotional and social intelligence.<sup>11</sup> Previous research has shown a strong correlation between total EQ score and children's behavior in the dental setting. The authors suggested that those who have higher scores of total EQ may actually exhibit better cooperation and less anxiety in the dental setting.<sup>12</sup>

EQ has four empirical subscales including intrapersonal, interpersonal, stress management and adaptability.<sup>13</sup> Intrapersonal EQ represents the ability to be in touch with one's own feelings and understand one's own emotional experiences. Interpersonal EQ involves the ability to understand and interact well with others, and to be sensitive to non-verbal communication. In this context, adaptability entails the ability to be realistic and to be effective in understanding difficult situations and problem-solving. Finally, stress management involves the ability to work under pressure and withstand stress without losing emotional control.<sup>10</sup>

Considering that EQ has been shown to be an effective factor on child's anxiety and behavior in the dental setting,<sup>12</sup> an assessment of emotional intelligence with a focus on its subscales could indicate problematic areas of emotional regulation in children, which may help in building emotionally-based behavioral management strategies. These are suited to take advantage of emotion-related regulation of children's behavior during dental treatments and possibly early interventions that could potentially shift children away from the emergence of some behavioral problems. Therefore, in this study, we attempted to evaluate the correlation between emotional intelligence subscales including intrapersonal scale, interpersonal scale, stress management and adaptability; and child's anxiety and behavior in the dental setting. We hypothesized that EQ plays an important role through its subscales in child's behavior and anxiety in the dental setting and a child with greater score in the subscales score can behave better in the dental setting.

## MATERIAL AND METHOD

The study population consisted of 100 children (47 boys and 53 girls), 7-12 years old, who attended the clinic of the Department of Pediatric Dentistry, Tabriz University of Medical Sciences, for routine dental treatments for the first time. The department clinic serves as a center for routine and comprehensive pediatric dental services in the area, and therefore, the referring patients can be assumed a good sample of the general population. Children may be examined routinely at schools or health centers and then referred to the department clinic for treatment, or parents may directly approach this facility to receive dental care for their children.

Since the importance of medical experiences as a highly complex variable has long been debated and pain during past medical history and emotional quality of past visits may affect the child cooperation in the dental setting,<sup>5</sup> the study was performed on children who did not have any previous dental or invasive medical experiences to eliminate their conditioning effects. Therefore, 123 children who matched the following inclusion criteria were selected:

- Complete physical and mental health, with no confounding medical history.
- No history of previous dental visit or intra-oral injections.
- No history of post-traumatic stress disorders or specific phobia related to the dental settings.
- No history of unpleasant experiences in medical settings.

- Having at least one decayed primary mandibular first molar, necessitating a pulpotomy and stainless steel crown (SSC) placement.

## Assessment Measures/Instruments

**Bar-On Emotional Quotient Inventory: Youth Version (EQ-i: YV):** EQ-i is a self report measure of emotionally and socially intelligent behavior, which provides an estimate of one's underlying emotional and social intelligence. The youth version (EQ-i: YV) has 60 items which are distributed over six subscales (Intrapersonal Relationships, Interpersonal Relationships, Stress Management, Adaptability, General Mood, Positive Impression) and Total EQ.<sup>11</sup> Four empirical factors including intrapersonal, interpersonal, stress management and adaptability emerged from the principal components analysis and thirteen subscales contribute to these four clusters. General mood and positive impression does not really form a part of EQ. General mood is a facilitator of emotional intelligence and facilitates the other factorial components of emotional intelligence.<sup>13</sup> Validation of the inventory on North American samples suggests that the Bar-On Emotional Quotient Inventory: Youth Version has excellent psychometric properties and identifies core features of emotional intelligence in children.<sup>14</sup>

**Frankl behavioral rating scale:** One of the more reliable and frequently used behavior rating systems is the Frankl Scale.<sup>5</sup> It divides observed behavior into four categories. The subject's behavior was graded based on this scale from 1 to 4, i.e. definitely negative, negative, positive, definitely positive, respectively.<sup>11</sup> Following is a description of the scale:

- Rating 1(--): Definitely negative. Refusal of treatment, forceful crying, fearfulness, or any other overt evidence of extreme negativism.
- Rating 2(-): Negative. Reluctance to accept treatment, uncooperativeness, some evidence of negative attitude but not pronounced (sullen, withdrawn).
- Rating 3(+): Positive. Acceptance of treatment; cautious behavior at times; willingness to comply with the dentist, at times with reservation, but patient follows the dentist's directions cooperatively.
- Rating 4(++): Definitely Positive. Good rapport with the dentist, interest in the dental procedures, laughter and enjoyment.

**Clinical Anxiety Rating Scale:** The six-point scale was used to rate anxiety of participants. The validity and reliability of Clinical Anxiety Rating Scale was established by Venham *et al.*<sup>6</sup> This scale rates anxiety from 0 (lowest anxiety) to 5 (highest anxiety) (Table 1).

After obtaining a comprehensive medical and dental history, an oral examination was conducted by a post-graduate student under supervision of an experienced pediatric dentist, and a treatment plan was established for each patient. A fluoride therapy was performed in the same session. The study procedure was explained to the parents of children who met the inclusion criteria of the study and a written informed consent was taken.

The study consisted of two appointments. Several studies have reported the importance of dental factors, such as pain or perceived lack of control during past dental treatments, for the development of

**Table 1.** Clinical anxiety rating scale

Score	Definition
0	Relaxed, smiling, willing and able to converse.
1	Uneasy, concerned. During stressful procedure may protest briefly and quietly to indicate discomfort. Hands remain down or partially raised to signal discomfort. Child willing and able to interpret experience as requested. Tense facial expression, may have tears in eyes.
2	Child appears scared. Tone of voice, questions and answers reflect anxiety, During stressful procedure, verbal protest, quietly crying, hands tense and raised, but not interfering. Child interprets situation with reasonable accuracy and continues to work to cope with anxiety.
3	Shows reluctance to enter situation, difficulty in correctly assessing situational threat. Pronounced verbal protest, crying. Protest out of proportion to threat. Copes with situation with great reluctance.
4	Anxiety interferes with ability to assess situation. General crying not related to treatment. More prominent body movement. Child can be reached through verbal communication and eventually with reluctance and great effort he begins the work of coping with threat.
5	Child out of contact with the reality of the threat. General loud crying, unable to listen to verbal communication, makes no effort to cope with threat, Activity involved in escape behavior, physical restraint required.

dental anxiety and problem behaviors.<sup>1</sup> Routine pediatric dentistry includes a pre-appointment session including comprehensive clinical examination and a no/minimal invasive procedure e.g. fluoride therapy to induce positive attitude toward future dental treatment. First dental visit is crucial in the formation of the child's attitude toward dentistry. If the first visit is pleasant, it paves the road for future successes. Thus, in the first appointment, EQ testing was conducted by a trained psychologist. A package containing the Farsi version of the EQ-i: YV was given to the subject. The validity and reliability of Farsi translation has been established previously.<sup>12</sup> The psychologist explained to the child how to complete the inventory. All children were asked to complete the questionnaire by themselves; however, those who were unable to do so were allowed to receive assistance from the examiner. Completion of EQ-i: YV test took about 35 minutes. To evaluate reliability of the answers, retest was performed on 25 randomly-selected subjects on the second appointment.

Two weeks after the first appointment, a second appointment was scheduled, in which the pulpotomy and SSC placement was performed by the post-graduate student. Briefly, after application of a topical anesthetic agent, an inferior alveolar nerve block injection was administered. Rubber dam was placed for a surgically clean operation. An access cavity was prepared using a high-speed hand piece; the coronal portion of the pulp was amputated, the debris was removed, and the hemorrhage was controlled. The pulp tissues of root canals were fixed by formocresol. Tooth was restored by SSC. The raters observed and rated the behavior and anxiety according to the Frankl behavioral rating scale and Clinical Anxiety Rating Scale, respectively, during the course of the treatment objectively, independently, and systematically. The raters scored simultaneously and independently, so they were blind to other investigators and they were blind to each other's scores allowing for assessment of inter-examiner agreement. The raters were blind to the results of the EQ test.

### Statistical analysis

Descriptive statistics including frequency (%) and mean (Standard Deviation) of variables was calculated. Pearson's correlation coefficient was employed for assessment of correlations between variables and Cohen's kappa coefficient was used to evaluate the agreement between the examiners regarding Frankl scale and Clinical Anxiety Rating Scale. Multiple linear regression analysis was used

to prediction of Frankl and Anxiety by total EQ and EQ subscales considering age and sex as covariate variables. All statistic tests were two-sided. A p value of < 0.05 was considered statistically significant. Statistical analysis was performed using the statistical package SPSS.13/Win.

### RESULTS

During the study period, 279 children aged 7-12 years old were enrolled, of whom, 123 children matched the inclusion criteria and completed the EQ test in the first appointment. 12 subjects did not attend for their second scheduled appointment. Another 11 subjects scored more than 10 in "Inconsistency Index" of EQ-I: YV, suggesting they responded randomly on the test, and therefore, were eliminated from the study. This index is calculated at the bottom of the "Bar-On EQ-i: YV Scoring Page" by summing up the absolute differences of 10 pair of specific item scores of the questionnaire. According to the "Inconsistency Index Guide" included on the same page, if "the Inconsistency Index TOTAL" is "10 or greater" the EQ score is considered inconsistent. Therefore, a total of 23 children were eliminated from the study and statistical analysis.

The assessment of inter-examiner agreement of data indicated good agreement between examiners judging for children's behavior and anxiety by the kappa-values of 0.78 and 0.75, respectively. Test-retest correlation for the Bar-on EQ test using Pearson's correlation coefficient was significant and showed good reliability ( $r=0.83$ ;  $p<0.001$ ).

### Descriptive analysis

The final sample consisted of 100 children (47 boys and 53 girls). The mean age of participants was 9.32 (1.59), (range 7-12 years old). Table 2 presents descriptive values of total EQ and its subscales, anxiety and Frankl scores of the participants. The highest and the lowest scores of total EQ were 127 and 80, respectively.

Table 3 presents correlations between total EQ, its subscales, anxiety and Frankl scores of the participants.

### Correlation between total EQ, EQ subscales and Frankl

There were statistically significant positive correlations between Frankl score and EQ total score ( $r=0.68$ ,  $p<0.001$ ), interpersonal scale ( $r=0.65$ ,  $p<0.001$ ), intrapersonal scale ( $r=0.59$ ,  $p<0.001$ ),

**Table 2.** Descriptive statistics of age, total EQ, EQ subscales, anxiety and Frankl of 7-12 years old children (N=100)

Variables	Mean	SD	Minimum	Maximum
EQ				
Intrapersonal scale	106.48	15.57	80	130
Interpersonal scale	103.90	11.20	75	126
Stress management	89.44	8.44	74	111
Adaptability	103.95	14.54	65	130
Total	102.04	10.80	80	127
Anxiety	2.37	1.69	0	5
Frankl	2.78	0.87	1	4
Age	9.32	1.59	7	12

stress management ( $r=0.34, p=0.03$ ) and adaptability scale ( $r=0.53, p<0.001$ ). Children with lower total EQ and EQ subscales scores had also lower Frankl scores, which is indicative of child’s poor cooperation. Multiple linear regression analysis series revealed that total EQ ( $\beta=0.70, p < 0.001$ ) can predict significance variance of Frankl score without confounding affect of age ( $\beta=0.05, p=0.45$ ) and sex ( $\beta= -0.07, p=0.31$ ). EQ subscales (interpersonal scale,  $\beta=0.411, p < 0.001$ ; intrapersonal scale,  $\beta=0.144, p = 0.042$ ; stress management,  $\beta=0.189, p = 0.023$ ; adaptability scale,  $\beta=0.29, p < 0.001$ ) also predicted Frankl score with no confounding effect of age ( $\beta=0.06, p=0.37$ ) and sex ( $\beta=-0.09, p=0.20$ ) as covariate variables.

**Correlation between total EQ, EQ subscales and anxiety**

As seen in Table 3, there were statistically significant negative correlations between anxiety score and EQ total score ( $r=-0.74, p<0.001$ ), interpersonal scale ( $r=-0.62, p<0.001$ ), intrapersonal scale ( $r=-0.70, p<0.001$ ), and adaptability scale ( $r=-0.61, p<0.001$ ). Children with higher scores of interpersonal, intrapersonal, and adaptability subscales had lower anxiety. However, no statistically significant correlation was found between anxiety and stress management

( $p=0.16$ ). Multiple linear regression analysis series revealed that total EQ ( $\beta=-0.76, p < 0.001$ ) can predict significance variance of Frankl score without confounding affect of age ( $\beta=0.007, p=0.92$ ) and sex ( $\beta=0.06, p=0.31$ ). EQ subscales (interpersonal scale,  $\beta=-0.41, p < 0.001$ ; intrapersonal scale,  $\beta=-0.21, p = 0.006$ ; stress management,  $\beta=-0.13, p =0.017$  and adaptability scale,  $\beta=-0.33, p < 0.001$ ) also predicted anxiety score with no confounding effect of age ( $\beta=-0.01, p=0.79$ ) and sex ( $\beta=0.22, p=0.174$ ) as covariate variables.

**Correlation between Frankl and anxiety**

Another main result of our study was the relationship between patient anxiety and patient cooperation. Pearson’s analysis indicated that there was a reverse significant relationship between anxiety score and Frankl score ( $r=-0.88, p<0.001$ ), indicating that more anxious children showed more uncooperative behaviors.

**DISCUSSION**

The literature on the relationship between EQ and child behavior and anxiety in the dental setting is extremely sparse. To the best of our knowledge, the only study investigating such relationship is a previous study of ours.<sup>12</sup> In the latter study, we evaluated the correlation between emotional intelligence and child’s anxiety and behavior, in which a strong and significant relationship between EQ and child’s behavior was the major finding. In the present investigation, the focus was to assess the impact of children’s EQ subscales scores on their behavior and anxiety in the dental setting.

In line with the previous study, overall EQ score showed a positive significant correlation with behavior. Salovey *et al* state that individuals with higher EQ cope better with the emotional demands of stressful encounters because they are able to accurately perceive and appraise their emotions, know how and when to express their feelings, and can effectively regulate their mood states.<sup>16</sup>

Emotional intelligence may actually serve to buffer and protect against negative life events and may be an important factor in the psychological adjustment and coping ability of children who experience negative life events. Some of the abilities related to emotional intelligence have been shown to be useful in reducing stress and improving health, well-being, and performance.<sup>17</sup> Salovey and

**Table 3.** Pearson’s correlations between Frankl, total EQ, EQ subscales and anxiety

Variable	Anxiety	Frankl	EQ	Interpersonal scale	Intrapersonal scale	Adaptability	Stress management
Anxiety		$r=-0.88^{**}$ $p < 0.001$	$r=-0.74^{**}$ $p < 0.001$	$r=-0.62^{**}$ $p < 0.001$	$r=-0.70^{**}$ $p < 0.001$	$r=-0.61^{**}$ $p < 0.001$	$r=-0.14$ $p=0.16$
Frankl			$r=0.68^{**}$ $p < 0.001$	$r=0.65^{**}$ $p < 0.001$	$r=0.59^{**}$ $p < 0.001$	$r=0.34^{**}$ $p < 0.001$	$r=0.53^{*}$ $p=0.03$
EQ				$r=0.81^{**}$ $p < 0.001$	$r=0.81^{**}$ $p < 0.001$	$r=0.71^{**}$ $p < 0.001$	$r=0.18^{*}$ $p=0.04$
Interpersonal scale					$r=0.59^{**}$ $p < 0.001$	$r=0.44^{**}$ $p < 0.001$	$r=0.18^{**}$ $p < 0.001$
Intrapersonal scale						$r=0.44^{**}$ $p < 0.001$	$r=-0.11$ $p=0.41$
Adaptability							$r=-0.24^{*}$ $p=0.03$
Stress management							

\* Correlation significant at  $p<0.05$ . \*\*Correlation significant at  $p<0.01$

Mayer originally defined emotional intelligence as the ability of an individual to monitor one's own and others' emotions; to discriminate among the positive and negative effects of emotion; and to use emotional information to guide one's thinking and actions.<sup>18</sup> The ability to manage emotions may facilitate executive functions associated with the coordination of numerous skills required for social behavior. This is apparent when unregulated social anxiety inhibits spontaneity and leads to overly constrained behavior.<sup>19</sup>

One of the well-accepted statements about anxiety is that it is a multidimensional construct that consists of somatic, cognitive, and emotional elements.<sup>1</sup> The results of the present study revealed a statistically significant inverse relationship between emotional intelligence and anxiety. This finding indicated that a high level of EQ is able to decrease the level of anxiety and plays an important role in reducing child anxiety in the dental setting. Studies indicate that the more frequently children reported anxiety disorder, the more often they reported emotional problems.<sup>20</sup> Also, the related studies emphasize the importance of emotional intelligence, which has become the unique contributor toward the arrangement of anxiety.<sup>21</sup> Inability to manage negative emotions can lead to work and relationship difficulties and is associated with clinical problems such as, anxiety and mood disorders.<sup>16</sup>

Although our previous study revealed a reverse correlation between emotional intelligence and anxiety, it did not reach a statistically significant level.<sup>12</sup> This inconsistency of the findings may be explained by the anxiety rating scales used in these studies. In the previous study, a self-report measure was used for the assessment of anxiety, and such a scale may be limited by the developmental level, response bias, and situational demands that must be controlled in order to obtain adequate assessment.<sup>22</sup> In the present study, however, a behavioral anxiety rating scale was employed, which does not have such limitations.

In attempt to assess four contributing subscales of total EQ (intrapersonal, interpersonal, stress management and adaptability), we found correlations with child's anxiety and behavior.

The intrapersonal subscale pertains to the knowledge and ability of expression of one's feelings. A child with a high intrapersonal score can be highly self-esteemed.<sup>23</sup> Also, individuals with high scores in this subscale generally feel good themselves and have a positive attitude towards their lives. They are able to express their emotions and know exactly what they are feeling. These individuals are independent, and rarely depend on others to make important decisions.<sup>23</sup> Generally, the capacity to regulate one's own emotions seems to be linked to a broader capacity for self-control, including the control of impulsive behavior.<sup>24</sup> In a dental setting, these qualities are among those which orchestrate child's response to the various stimuli present.<sup>11,12,20,24</sup> Statistically significant correlation of intrapersonal scale with behavior as well as a statistically significant inverse correlation with dental anxiety confirms such regulations.

Interpersonal subscale of EQ is the ability of establishing and maintaining relationship with others. Individuals who score well on this subscale are perceived to be responsible and dependable people who have good social skills. They are also sensitive to others' feelings and care about them and show concern for others. In the social groups, individuals with high interpersonal scale are perceived to be cooperative and contributing members.<sup>5,11</sup> The results of the present study indicated significant correlation of interpersonal scale with behavior and anxiety. Interpersonal emotional intelligence has been shown to be related with uncooperative and violent behavior.<sup>10</sup> This suggests

that individuals with these behavioral problems may lack in empathy and sense of social responsibility.<sup>10,13</sup> A child with high interpersonal scale may establish better relationship with the pediatric dentist, be less anxious, and therefore, be more cooperative in the dental setting.

Another statistically significant correlation of child's behavior and anxiety was found with adaptability. The People with good scores in this area are generally flexible and effective in coping with problematic situations. Individual adaptability scale addresses abilities of coping with environmental and social demands and dealing with problematic situations. They are not passive under such conditions and proactively examine situation. They are perceived to have enhanced ability to adjust their emotions and behavior to changing situations and conditions.<sup>11,23</sup> Moreover, studies indicate that uncooperative behavior such a aggression is negatively related to adaptability.<sup>10</sup> These emphasize the effect of adaptability on child's behavior and anxiety in the dental setting.

Assessing the correlation of stress management with child's behavior and anxiety in the dental setting yielded rather interesting results. Children with high stress management scale have ability of withstanding stress and managing their impulses. They are generally calm, rarely impulsive, and work well under pressure. These people cope with stress actively and positively. Similar to the interpersonal scale, stress management has been shown to be related with un cooperation and violent behavior.<sup>11,23</sup> The present study indicated a statistically significant positive correlation between stress management and child's behavior. However, the reverse correlation of anxiety with stress management, as seen with other subscales, did not reach a statistical significance. This could confirm a notion that the stress management subscale, consisting of stress tolerance and impulse control, may play a more prominent role in shaping the child's behavior in the stressful situations. While a high level of anxiety exists, stress management ability makes the child capable of manifesting a more cooperative behavior in the dental setting.

According to the results of multiple linear regression analyses, age and sex have no effect on the relationship of total EQ and EQ subscales with behavior and anxiety of participants. The literature on anxiety as a part of child's emotional outcome has produced inconsistent findings with some studies showing a clear difference between males and females<sup>25,26</sup> and others indicating no differences.<sup>27,28</sup> Although there are indications that anxiety is significantly associated with age in an inverse manner,<sup>29</sup> the present study did not reveal an effect of age on child outcomes, probably due to the relative narrow age range of subjects assessed.

## CONCLUSIONS

The findings of present study imply that children with higher total EQ scores as well as higher subscale scores have more adaptive behavior and lower level of anxiety during dental treatment course. In addition, higher scores in EQ subscales seem to be consistently correlated with a positive attitude towards their lives, and are generally flexible and effective in coping in stressful situations as well as being cooperative and contributing individuals. Moreover, higher score in stress management subscale seems to be related to better control over affective information including anxiety compared with other scales in stressful situations. Overall, higher total EQ scores as well as higher subscale scores behave effectively in coping with problematic situations and are generally calm, rarely impulsive, and respond well under pressure.

The findings of present study imply that children with more emotional intelligence have more adaptive behavior and lower level of anxiety during dental treatment course. Moreover, children with high scores in EQ subscales seem to have high self-esteem with a positive attitude towards their lives, and are generally flexible and effective in coping in stressful situations as well as being cooperative and contributing individuals. Higher score in stress management subscale seems to be related to better control over affective information including anxiety compared with other scales in stressful situations. Overall, higher total EQ scores as well as higher subscale scores behave effectively in coping with problematic situations and are generally calm, rarely impulsive, and respond well under pressure. In addition, in regards with emotions, these skills can be important effective factors in reducing anxiety.

In the present study, we have attempted to put the pieces of the developmental puzzle together by suggesting two conceptually based pathways, namely EQ and child anxiety/behavior that may serve as models for the future studies on emotion–behavior relationships in children.

Moreover the present paper provides preliminary evidence of children emotional intelligence subscales correlation with the children behavior and anxiety in the dental setting. The findings of current study may enhance our knowledge about an important predictor factor which facilitate our efforts in children’s behavior management and therefore may help in building emotionally-based behavioral management strategies which are suited to take advantage of emotion-related regulation of children’s behavior during dental treatments.

The studies of this kind are not without limitations. First, by relying solely on self-reports of emotional intelligence, response biases inherent in such measures may have occurred. Second, the uncooperative behavior in the dental setting in children under six years of age, which is even more common, can not be assessed along with emotional intelligence, mainly because the abstract nature of the emotional intelligence has made it impossible to design a tool for assessment of EQ in younger children. Therefore, studies involving the evaluation of EQ are limited to children over six years of age. Third, there are some factors that may moderate or mediate children’s emotional development including child characteristics, such as evolving temperament, the parent’s developmental history and the parent’s social ecology. Also the relationship between EQ and children’s behavior and anxiety may be mediated through various intervening factors like social and cultural status of the children. Therefore, additional work is warranted within a given socioeconomic and cultural context.

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