

Emotional Intelligence: An Overlooked Element of Dental Education

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ABSTRACT

Introduction: Emotional intelligence (EI) refers to a collection of abilities connected to self-control, self-motivation and the capacity to identify emotions. In order to treat patients with a special, tailored approach, the dentist must also be skilled in comprehending the impact of the patient's behavior.

Objective: Present study was designed to evaluate the level of EI in dental students and to relate the domains of emotional intelligence with gender discrimination.

Methods: This cross-sectional study was conducted using an e-based questionnaire at a dental teaching hospital in Karachi, Pakistan. A total of 110 students participated in the study by answering 30 questions of trait emotional intelligence questionnaire short form (TEIQUE-SF). The data was evaluated using SPSS version 26 from 93 completely filled questionnaires.

Results: On the basis of the mean and standard deviation of data, the majority of responses appeared to fall within the range of neutral or agree on Likert scale. (Linkert's scale: strongly disagree, disagree, neutral, agree strongly agree). The coefficient alpha (α) values for EI factors of overall data set range from small (0.46) to large (0.72), with no gender related differences. The Spearman's correlation test indicated statistically significant results between the EI factor traits except emotionality and sociability.

Conclusion: It is important for dental students and faculty to understand the concept of EI and emphasize the likelihood of this to be included in the curriculum and clinical training.

Keywords: Behaviour, Dental Students, Emotional Intelligence, Social Intelligence

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INTRODUCTION

A special kind of intelligence, known as emotional intelligence (EI) refers to a collection of abilities connected to self-control, self-motivation and the capacity to identify emotions. (Nasir and Masrur, 2010) Quite a few authors explain EI as the capacity of a person to perceive and control the emotions of their own and others and to utilize this information to direct their actions, reasoning, and thinking (Ranasinghe et al., 2017). It can be described as a collection of abilities that give someone the capacity to motivate themselves in the face of obstacles, to manage the pressure and disappointment, and to remain determined and upbeat. EI plays a significant role in obtaining success by including abilities like motivation and tenacity. EI has recently been acknowledged as a new dimension of intelligence that is crucial for professional success and has a significant positive impact on one's personal development, mental health, and career advancement (Lopes et al., 2006).

According to some researches, EI is more important for success in life and the job, than intelligence since it gives people the ability to solve problems more creatively. The capacity to evaluate and handle stressful experiences, including the emotions that these events cause or excite, may act as a moderator between the perception of self-esteem, physical and psychological health. Additionally, it has been suggested that crucial qualities for healthcare professionals include the capacity to recognize, control, and manage the emotions of own and other people.

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They help them manage stress better, which benefits both job advancement and the maintenance of their physical and mental wellbeing (Humphris et al., 2002).

Emotional intelligence (EI) is defined in relation to the perception, evaluation, and emotional expression; the emotional support of thought; the comprehension, analysis, and application of emotional knowledge; and the reflective control of emotion (Carr, 2000).

When examined in the perspective of a variety of intelligences suggested by Gardner in his theory of multiple intelligences, the EI construct concentrates on a comparatively small group of talents and capabilities, especially when dealing with people or their emotions. In other words, it is possible to identify additional important abilities or intelligences that can be used to further desired goals despite opposition to the recommendations made by those advocating EI in schools (Cadman and Brewer, 2001). Similarly, EI has been recommended for the selection criterion of medical students. It has also been recommended as a key component of professional skill in some parts of healthcare education (Wagner et al., 2002). The EI of medical school graduates has also been linked to a higher patient satisfaction rate (Mishra et al., 2019). The idea that EI-related abilities and behaviours can be developed or improved has contributed to the increased interest in EI (Polychronopoulou and Divaris, 2009). EI is a trait that may possibly help people to identify and control the emotions triggered by stressful situations. People with high EI might use coping skills that lead to better outcomes. Through the use of unstructured face-to-face interviews, this above discussed study sought to better understand how dentistry students at various EI levels manage stress.

Dental education and practice are often acknowledged to be

among the most tough, stressful, and difficult fields. Numerous studies have shown that stress is present throughout a dentist's profession. Therefore, it is necessary for dental students to grow a variety of abilities, including intellectual, clinical, and interpersonal ones (Plasschaert et al., 2005). In order to treat patients with a special, tailored approach, the dentist must also be skilled in comprehending the impact of the patient's behaviour. It is clear that employees in the healthcare industry, such as dentists, nurses, and healthcare staff, all bring significant passions to their jobs. From the last two decades, research on EI has shown that it may have a significant impact on some emotional benefit practices or lead to interpersonal problems. EI is currently understood to be a conceptual framework for pure intelligence and cognitive capacity that transforms psychological knowledge into words understandable by those who have not received formal psychology training, such as dentists (Perazzo et al., 2021).

Present study was designed to evaluate the level of emotional intelligence in dental students and to relate the domains of emotional intelligence with gender discrimination.

METHODS

This cross-sectional study was conducted using a e-based questionnaire at dental teaching hospitals across Karachi, Pakistan. The ethical approval for this study was obtained from the ethical review board at Altamash Institute of Dental Medicine prior to commencing the study (IRB NO. AIDM/ERC/09/2022/01). A total of 110 student participated in the study by answering a questionnaire consisting of 30 questions. They were explained the purpose of the study through a short note and were asked and guided to be the part of the study. Demographic data including name, age and year of study and email addresses, preceded the questions that were used to determine the knowledge and perceptions of students towards emotional intelligence.

Petrides (2009) developed the short form of the trait emotional intelligence questionnaire (TEIQUE-SF) to produce a score that is mostly taken from the full form of the trait emotional questionnaire, covering fifteen various elements of personality. It is a self-report scale with 30 questions and needs to be finished within 10 minutes. The original likert scale included seven points, later lowered to a scale of five points: strongly disagree, disagree, neutral, agree, and strongly agree (Petrides, 2009).

The scale has four subscales: self-control, which has six items (4, 7, 15, 19, 22, 30), emotionality, which has eight items (1, 2, 8, 13, 16, 17, 23, 28), sociability, which has six items (6, 10, 11, 21, 25, 26), and well-being, which has six items (5, 9, 12, 20, 24, and 27). The final four elements, which come from two "stand-alone" facets (adaptability and self-motivation), directly affect the overall score without affecting any of the factor scores (13, 14, 18, 29).

By adding all the item scores and dividing them by the overall number of items, one may calculate the global trait emotional intelligence score. The questionnaire contained some questions with inverted scores (q.no 16,2,18,4,5,7,22,8,10,25,26,12,13,28

, 14) (Siegling et al., 2015). The mean was calculated for each student generally, for each response to a question, and then for gender discrimination. The mean between 1-1.8 shows highly disagree, whereas the mean between 1.81-2.6 shows disagree. The participants' responses range from neutral (2.61-3.40), to agree (3.41-4.2), to highly agree (4.21-5) (Siegling et al., 2015).

Additional Cronbach alpha calculations were made for each of the five EI features (self-control, emotionality, sociability, well-being and adaptability). Following the compiling of the completed questions into a tabular format on Microsoft Excel and the computation of the mean, standard deviation, and percentages, the data was examined using SPSS version 26.

Since the sample size collected was more than 50 individuals, Kolmogorov-Smirnov test was utilized, indicating the data is not normally distributed, which yielded the application of Spearman's correlation test (Mishra et al., 2019).

RESULTS

Data was analyzed for 93 students who provided with complete forms with adequate response and out of these, 34 were male and 59 were female with the mean EI scores of 3.01 ± 0.44 and 3.16 ± 0.46 respectively. On the basis of the mean and standard deviation of our overall data set, the majority of responses appeared to fall within the range of agree, and these responses were further analyzed using percentages (Table 1).

Regarding questions pertaining to self-control, most of the students agreed that they were able to deal with stress (48.4%), could easily find ways to manage their emotions (48.4%), and were admired for being calm (38.7%). Although the majority of students disagreed with the statement that they find it difficult to regulate their emotions (38.7%) and avoid getting involved in situations they wish to leave later (37.6%). We received an equal number of disagree and neutral responses to the question concerning a tendency for frequent mind change (32.3%).

About emotionality-related questions, the majority of students agreed that they did not find it difficult to express their emotions (31.2%), understand the viewpoint of others (41.9%) and experiences the emotions of others. Even more students agreed that they frequently reflect on their emotions (62.4%), and it was difficult for them to express affection (34.4%) and form strong bonds with their loved ones (39.8%). However, the majority of students (45.2%) disagreed, citing a lack of emotional comprehension.

In response to a question concerning their sociability, 49.5% of students indicated that they interact effectively with others. In contrast, responses to other questions were predominantly neutral or disagree. Students responded neutrally to the statements that they had no control over other people's emotions (45.2%), they also influence other people's feelings (43%), and they were good negotiators (47.3%). Students disagreed that it was difficult for them to stand up for their rights (35.5%) and they frequently back down despite being right (41.9%).

Concerning the well-being questions, the majority of students agreed that they had a good number of qualities (51.6%), their

lives were going well (47.3%), they were pleased (50.5%), and were strong (46.2%). Nonetheless, students also agreed that they did not enjoy their lives (37.6%) and had a gloomy view on most things (35.5%).

In response to questions about adaptability, students agreed that they were highly motivated (36.6%) and able to adapt to new environments (46.2%). However, students also agreed and provided neutral responses regarding the difficulty of adjusting to specific situations (32.3%) and sustaining long-term motivation (33.3%).

The coefficient alpha (α) values for EI factors in our overall data set range from small to large, with the highest value for self-control (Table 2). Cronbach alpha test also revealed the reliability of the internal consistency for self-control (0.72), emotionality (0.51), sociability (0.47), well-being (0.46) and adaptability (0.69).

Further, total EI and its related factors were found similar in males and females.

The Spearman's correlation test indicated statistically significant results, between all the traits except emotionality and sociability (Table 3, Figure 1).

The Cronbach alpha for all 30 items on the TEIQUE-SF questionnaire in the current study was determined to be 0.839, indicating good reliability.

Table 1: TEIQUE-SF Questionnaire Details

Q. No	Questions	MEAN \pm SD	SDA	DA	N	A	SA
1	Expressing my emotions with words is not a problem for me.	2.95 \pm 1.17	12(12.9%)	23(24.7%)	22(23.7%)	29(31.2%)	7(7.5%)
2	I often find it difficult to see things from another person's viewpoint.	3.40 \pm 1.03	1(1.1%)	23(24.7%)	18(19.4%)	39(41.9%)	12(12.9%)
3	On the whole, I'm a highly motivated person.	3.26 \pm 0.96	4(4.3%)	15(16.1%)	33(35.5%)	34(36.6%)	7(7.5%)
4	I usually find it difficult to regulate my emotions.	2.69 \pm 1.05	10(10.8%)	36(38.7%)	22(23.7%)	22(23.7%)	3(3.2%)
5	I generally don't find life enjoyable.	3.37 \pm 1.09	5(5.4%)	16(17.2%)	24(25.8%)	35(37.6%)	13(14%)
6	I can deal effectively with people.	3.44 \pm 0.91	4(4.3%)	9(9.7%)	28(30.1%)	46(49.5%)	6(6.5%)
7	I tend to change my mind frequently.	2.68 \pm 0.98	11(11.8%)	30(32.3%)	30(32.3%)	21(22.6%)	1(1.1%)
8	Many times, I can't figure out what emotion I'm feeling.	2.64 \pm 1.13	12(12.9%)	42(45.2%)	10(10.8%)	25(26.9%)	4(4.3%)
9	I feel that I have a number of good qualities.	3.74 \pm 0.76	0(0%)	5(5.4%)	27(29%)	48(51.6%)	13(14%)
10	I often find it difficult to stand up for my rights.	2.83 \pm 1.13	9(9.7%)	33(35.5%)	23(24.7%)	20(21.5%)	8(8.6%)
11	I'm usually able to influence the way other people feel.	3.17 \pm 0.88	2(2.2%)	18(19.4%)	40(43%)	28(30.1%)	5(5.4%)
12	On the whole, I have a gloomy perspective on most things.	3.13 \pm 1.06	6(6.5%)	22(23.7%)	25(26.9%)	33(35.5%)	7(7.5%)
13	Those close to me often complain that I don't treat them right.	3.54 \pm 1.13	4(4.3%)	17(18.3%)	15(16.1%)	38(40.9%)	19(20.4%)
14	I often find it difficult to adjust my life according to the circumstances.	3.11 \pm 1.12	4(4.3%)	31(33.3%)	18(19.4%)	30(32.3%)	10(10.8%)
15	On the whole, I'm able to deal with stress.	3.26 \pm 1.07	9(9.7%)	12(12.9%)	22(23.7%)	45(48.4%)	5(5.4%)
16	I often find it difficult to show my affection to those close to me.	3.16 \pm 1.14	7(7.5%)	23(24.7%)	21(22.6%)	32(34.4%)	10(10.8%)
17	I'm normally able to "get into someone's shoes" and experience their emotions.	3.52 \pm 0.82	0(0%)	10(10.8%)	34(36.6%)	39(41.9%)	10(10.8%)
18	I normally find it difficult to keep myself motivated.	2.88 \pm 1.04	10(10.8%)	23(24.7%)	31(33.3%)	26(28%)	3(3.2%)
19	I'm usually able to find ways to control my emotions when I want to.	3.46 \pm 0.84	1(1.1%)	12(12.9%)	29(31.2%)	45(48.4%)	6(6.5%)
20	On the whole, I'm pleased with my life.	3.59 \pm 0.83	2(2.2%)	6(6.5%)	29(31.2%)	47(50.5%)	9(9.7%)
21	I would describe myself as a good negotiator.	3.34 \pm 0.80	1(1.1%)	10(10.8%)	44(47.3%)	32(34.4%)	6(6.5%)
22	I tend to get involved in things I later wish I could get out of.	2.61 \pm 0.98	11(11.8%)	35(37.6%)	28(30.1%)	17(18.3%)	2(2.2%)
23	I often pause and think about my feelings.	3.69 \pm 0.77	1(1.1%)	7(7.5%)	19(20.4%)	58(62.4%)	8(8.6%)
24	I believe I'm full of personal strengths.	3.50 \pm 0.91	4(4.3%)	6(6.5%)	31(33.3%)	43(46.2%)	9(9.7%)
25	I tend to "back down" even if I know I'm right.	2.61 \pm 1.00	9(9.7%)	39(41.9%)	29(31.2%)	11(11.8%)	5(5.4%)

26	I don't seem to have any power at all over other people's feelings.	2.72 ± 0.83	7(7.5%)	28(30.1%)	42(45.2%)	16(17.2%)	0(0%)
27	I generally believe that things will work out fine in my life.	3.97 ± 0.83	0(0%)	5(5.4%)	18(19.4%)	44(47.3%)	26(28%)
28	I find it difficult to bond well even with those close to me.	3.27 ± 1.09	5(5.4%)	21(22.6%)	20(21.5%)	37(39.8%)	10(10.8%)
29	Generally, I'm able to adapt to new environments.	3.54 ± 0.96	3(3.2%)	10(10.8%)	25(26.9%)	43(46.2%)	12(12.9%)
30	Others admire me for being relaxed.	3.30 ± 1.07	5(5.4%)	18(19.4%)	24(25.8%)	36(38.7%)	10(10.8%)

SD = Strongly disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree

Table 2 : Description of EI factors (N = 93)

EI Factors	Mean	Std. Deviation	Minimum	Maximum	α
Cumulative EI Score	3.21	0.41	2.27	4.17	0.839
Self-Control	3.00	0.52	2.00	4.17	0.72
Emotionality	3.10	0.40	2.00	4.00	0.51
Sociability	3.02	0.49	1.83	4.17	0.47
Well Being	3.55	0.60	2.00	4.83	0.46
Adaptability	3.20	0.74	1.75	4.75	0.69

N= sample size, α=Cronbach alpha

Table 3: Correlation significance for all five variables (N=93)

	Self-control (r, p-value)	Emotionality (r, p-value)	Sociability (r, p-value)	Well-being (r, p-value)	Adaptability (r, p-value)
Self-control					
Emotionality	0.244, 0.018*				
Sociability	0.381, <0.001*	0.032, 0.758			
Well-being	0.467, <0.001*	0.241, 0.020*	0.327, 0.001*		
Adaptability	0.538, <0.001*	0.251, 0.015*	0.388, <0.001*	0.701, <0.001*	

rs= Spearman's correlation coefficient, *p-value <0.05 = statistical significance

DISCUSSION

Everyone needs to set goals in order to accomplish their life's aspirations. The pursuit of these objectives has the potential to add stress and emotion to the everyday routine. Those with emotional stability can cope with some challenging circumstances related to a hectic life (Gohm et al., 2005). EI at its very basic concept is the ability to control one's own emotions (Salovey and Mayer, 1990). EI is currently thought as a type of pure intelligence or cognitive capacity, that can transform psychological knowledge into language. Further, it can easily can be understood by others who have not received any formal training in psychology, such as dentists (Bhaskar et al., 2013). In Medical and Dental Institutions, students with higher EI scores can play a very significant role in improving patient outcomes. (Wagner et al., 2002) Therefore, institutions have to assess EI as a criterion for the selection of medical and dental students.

In the present study, 63.4% subjects were females and similar were the results by Rehman in a correlational study on emotional intelligence, documented 67.11% of the study subjects were females (Rehman and Jamil, 2021). According to a research, more women than men are admitted to universities, particularly in fields related to medicine. The male to female ratio in undergraduate medical and dental programs has been reported to be 1:1.31 globally. The evidence of female predominance was strengthened by a Pakistani study conducted in Lahore (Khan et al., 2013).

An intriguing discovery about gender disparities in EI was found. In contrast to the stereotype that "IQ is male and EQ is female," EI was shown to be practically identical in males and females. Additionally, we discovered that ratings for all four EI components were highly similar between men and women.

Previous researches regarding the variation in EI in gender showed diverse outcomes. The results obtained from the study suggested that the mean EI among the males was marginally higher in comparison to the female counterparts (Alkhayr et al., 2022). Scherer and Petrick (Scherer and Petrick, 2001) proposed that the gender variations are due to cultural ideas influencing the postulations, anticipations, and behaviors of an individual. Hence, the gender based EI reports from different geographical areas are diverse. The studies from the different countries showed higher EI among females.(Ranasinghe et al., 2017; Van Rooy et al., 2005) while reports from Australia indicated that male students were emotionally more intelligent (Carr, 2009). Our results were in agreement with a previous study from the same geographical location in Pakistan with no significant gender difference in EI (Imran et al., 2013). The difference in the results could be the gender related cultural constrains and male dominance, as it is different in assorted societies in the world.

The analysis of emotional intelligence demonstrates that the mean values of EI traits stays in the neutral range and many studies further indicated that the future doctors typically have low and medium emotional quotients. This can results in future doctors isolating with unpleasant and uncomfortable emotional situations because mental protective strategies, such reasoning and affect isolation, are common (Abe et al., 2018; Sundararajan and Gopichandran, 2018).

Cronbach's alpha of the mean EI scoring scale was good and similar facts converged with the internal reliabilities reported by the scale constructors was documented in multiple studies (Petrides, 2009) and the mean Cronbach alpha for subsequent parameters for EI was below 5. One of the reason could be that Cronbach's alpha is usually low when the number of items is less than eight (Hjalmarsson and Däderman, 2022). These findings confirmed the multiple trait EI's comparatively low mean, pointing to the existence of items with poor global scale correlation. This finding might point to the scale's multidimensionality and is consistent with the idea that the scale's internal structure as a global trait EI measure is not yet firmly established with a high degree of reliability. For instance, Perera was worried about the latent structure of item response data from the TEIQue-SF, or, more specifically, its evidence for dimensional and construct validity. Perera noticed cross-

loadings of sex items that make up self-control (Items 8, 10, 15, 19, and 23) (Perera, 2015). These traits were cross-loaded from emotional and sociable traits. This finding may help to explain why these three subscales in our study had relatively lower reliability as well as why the global trait EI scale's mean inter-item correlation was so low. As a result, researchers should disclose their findings at the subscale level rather than just the level of the overall trait EI scale score. On the subscale level of three of the four EI dimensions (Sociability, Self-Control, and Emotionality), the internal consistencies in this study were relatively weak (0.70), as determined by Cronbach's alpha. In published studies, the dependability of Self-Control and Emotionality is typically lower than that of well-being, which is consistent with our findings. At subscale level 30, not all studies provide Cronbach's alpha values (Wytykowska et al., 2016). While Jacobs also discovered a low score for emotionality (0.58) in their German version of the TEIQue-SF (Jacobs et al., 2016), the reported levels of Cronbach's alpha for SelfControl and Emotionality are about 0.60 in some researches (Stamatopoulou et al., 2016). For sociability, self-control, and emotionality, some studies have reported slightly higher Cronbach's alpha values, but they are still only around 0.70 (Feher et al., 2019).

Different studies have shown the similar results as documented in our study. Our results were compared with Saudi Arabia, Chinese, Canadian and Turkish researches regarding the similar details (Alkhayr et al., 2022). Most of the EI factors were adjusted in the neutral medium (mean between 2.61-3.40) and agree range (mean between 3.41-4.2). Our ability to control urges and desires is indicated by a medium or higher self-control factor score. This component measures your capacity for managing stress and pressure from the outside world. Inflexibility is the outcome of poor self-control. A reasonable breadth of emotion-related talents is reflected in emotionality scores. Such people naturally have the capacity for emotional perception and expression as well as the development and maintenance of close relationships with others. The sociability element also emphasizes the value of social connections and influence (Javed et al., 2023).

Our study describes the statistically strong correlation between the multiple traits (self-control, emotionality, sociability, well-being and adaptability) for emotional intelligence and similar were the results demonstrated by Lerman in a recent study on emotional intelligence in dental students (Lermen et al., 2022). Emotionality and sociability were the parameters not showing any correlation in our results whereas Alkhayr in his latest research has documented even strong correlation between these two factors as well (Alkhayr et al., 2022). Our sample scores on this factor indicates that our students are reasonably just fair in their social interaction, based on perceived good listening and communication skills and they require guidance in this trait.

CONCLUSION

This study with the analysis of emotional intelligence for the dental students led us to conclude that the future dentists have low to medium emotional quotients with no gender related differences.

SUGGESTIONS AND RECOMMENDATIONS

It is important for dental students and faculty to understand the concept of EI and examine the likelihood of it to be included in the curriculum and clinical training. Emotional intelligence contributes to the professionalism of dentists where they should know how to control their emotions, to avoid job stress and to provide better care and meaningful doctor-patient relationships. As a result, managing the stress that comes with providing regular oral health care would typically demand someone with a high level of emotional intelligence.

LIMITATIONS OF THE STUDY

Small sample size was used in this study. Additionally, there ought to have been an almost equal representation of each gender. Due to the fact that only one sort of student and one institution were recruited, there is also the problem of generalizability.

Data may have been skewed as a result of using self-assessment forms to evaluate personality traits. People frequently answer in socially acceptable dimensions, according to studies, which may result in inaccurate statistics.

In spite of these drawbacks, this study nevertheless has certain advantages. As far as we are aware, this is the comprehensive study that has looked at the relationship between emotional intelligence, personality, and emotion management skills in dental students. The study's questionnaire has been validated in numerous research and is utilized internationally. Additionally, other institutions could adopt the study's methodology.

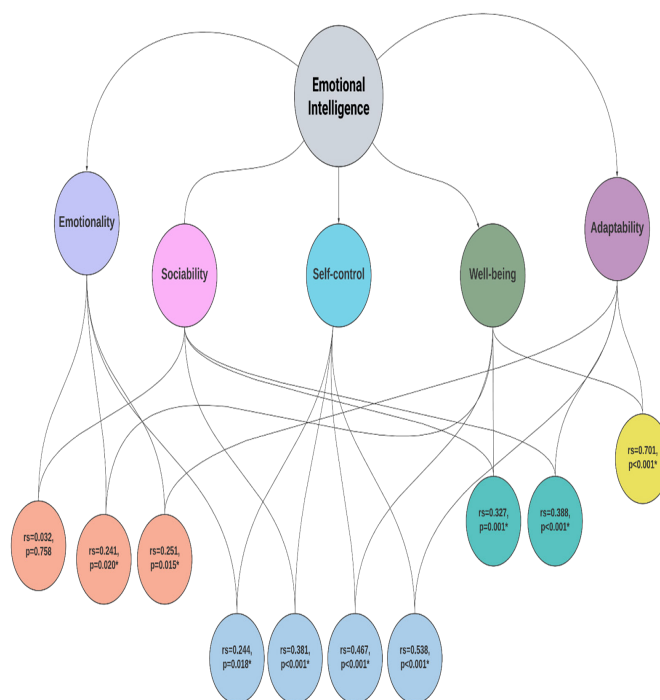


Figure 1: Correlation significance via spearman's rank test for all five variables (N=93).

DECLARATION OF INTEREST

The authors declare no conflict of interest.

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AUTHOR'S CONTRIBUTION

- 1. R.A.:** Supervision, conceptualization, writing - original draft, writing, review and editing.
- 2. A.K.P.:** Designed the study, literature search and write-up.
- 3. R.A.:** Literature search, sampling, acquisition, and analysis of data.