RESEARCH ARTICLE

Emotional intelligence as an indicator of coping skills among undergraduate dental students at Peshawar: A correlational study

Basheer Rehman[1], Brekhna Jamil[2]

Abstract

Objective: To determine correlation between emotional intelligence and academic stress.

Method: The quantitative correlational study was conducted in 2016 at the Khyber College of Dentistry, Peshawar, Pakistan, and comprised undergraduate dental students in the 2015-16 session regardless of age, gender and the academic year. Emotional intelligence and dental environmental stress were calculated and compared. Data was analysed using SPSS 20.

Results: Of the 298 students, 98(32.89%) were males and 200(67.11%) were females. The overall mean emotional intelligence score was 81.23±22.8, while the overall mean dental environmental stress score was 109.54±19.5 with a trend of decreasing stress levels from first to final year. A Pearson correlation test was run. Significant negative relationship was found between emotional intelligence and academic stress ($p<0.05$).

Conclusion: The gradual increase of emotional intelligence from first to final year showed the importance of teaching and learning methods that incorporate certain emotional intelligence trends.

Keywords: Emotional intelligence, Coping skills, Undergraduate dental students. (JPMA 71: 806; 2021)

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Introduction

Stress is a pressure or worry caused by problems in one's life the perception of which is based on personal beliefs and attitudes.[1] Stress can manifest in different forms depending on the situation. Academic stress among college and university students has become a topic of interest during the last couple of decades. Manifestations of academic stress include abnormal sleep and eating behaviour as well as episodes of headache or stomach ache one or several times a week.[2]

Development of effective strategies is important to cope with stressful situations, and their absence can lead to ill health, negative emotional state and poor performance during active academic years.[3] The academic environment of many medical schools itself is a pressure situation in the form of an authoritative rigid system where the primary stress is on competition rather than cooperation among learners. Such type of stressors not only affect undergraduate studies, but may continue during the future postgraduate study period, and later into practical life.[4] Increased self-efficacy and control can improve academic performance by lowering the stress levels among students.[5]

Dental students encounter certain stressors during their training life, including time and scheduling pressures, managing uncooperative patients, and the highly technical and intensive nature of work.[6] Dentistry students need to achieve certain competency level through contemporary curricula. These competencies include theoretical knowledge, and clinical and interpersonal skills. Unlike their first two years of academic studies, the third and final years are relatively stressful because of the incorporation of considerable amount of clinical work. Periodic assessment tests, accomplishment of mandatory clinical cases and case presentations add to the existing stressful life. The resulting stress can lead to a variety of psychological morbidities, including anxiety, substance abuse, low work output and burnout.[7]

Individual responses to stress vary and are affected by their cognitive appraisal of the stressful situation. Certain personality traits can affect an individual's ability to cope with a stressful situation encountered during clinical tasks and is related to hidden curriculum rather than the taught courses. One of these personality traits is emotional intelligence (EI) that has a profound effect on the perception of emotional and stressful situations.[8]

The concept of EI used to be referred to as soft skills or communication skills, and is the ability to recognise one's own feelings and those of others and manage those emotions to create strong relationships. It has been shown that EI affects academic and professional success and contributes to individual performance over and above the level attributable to general intelligence. Individuals with higher EI show more positive social functioning in interpersonal relationship compared to those with low EI

[1]Department of Oral & Maxillofacial Surgery, Khyber College of Dentistry, Peshawar, Pakistan; [2]Institute of Health Professions Education & Research, Khyber Medical University, Peshawar, Pakistan.

Correspondence: Basheer Rehman. e-mail: trygeminal76@yahoo.com

levels. In clinical practice, EI has been found to be related to performance, higher academic achievement, empathy in medical consultation, doctor-patient relationships, clinical performance and patient satisfaction.[9]

Studies examining the relationship between EI and stress-coping ability have been rare. The current study was planned to fill the gap by trying to establish link between EI and academic stress.

Subjects and Methods

The quantitative correlational study was conducted in 2016 at the public-sector Khyber College of Dentistry, Peshawar, Pakistan, After approval from the institutional ethics review board, undergraduate dental students from first to final year in the 2015-16 session regardless of age and gender were included. Those not willing to participate and those with any known psychological morbidities were excluded.

After getting informed consent from the subjects, EI score of each student was obtained using the Emotional Quotient Self-Assessment Checklist.[10] They were then given the dental environmental stress (DES) questionnaire.[11]

Data was analysed using SPSS 20. EI and stress levels of the students were expressed as mean and standard deviation (SD). One-way analysis of variance (ANOVA) and Tukey Post-hoc tests were performed for EI and academic stress separately to compare the mean difference among the groups.

Spearman correlation coefficient was used to check relationship between EI and academic stress at different academic levels. EI and academic stress were correlated using Pearson correlation. P<0.05 was considered statistically significant.

Results

Of the 298 students, 98(32.89%) were males and 200(67.11%) were females. Also, 71(24%) students were from the first year, 74(25%) second year, 76(25%) third year, and 77(26%) were from the final year. The overall mean age of the sample was 20.14±1.521 years.

The overall mean EI score was 81.23±22.8 and mean DES score was 109.54±19.5, showing a gradual increase in total mean EI score and a trend of decreasing stress levels from first to final year (Table 1).

There was a significant difference of academic stress and EI among the four academic groups (Tables 2-5).

There was strong positive relationship between EI and different academic levels (Table 6). Also, there was a strong negative relationship between academic stress and

Table-1: Mean values of emotional intelligence and academic stress (n=298).

Class	n	Emotional Intelligence Mean±D	Academic Stress Mean±SD
1st year	71	56.52±4.0	129.11±11.2
2nd year	74	71.64±11.7	125.22±9.9
3rd year	76	80.83±9.5	97.28±4.4
Final year	77	113.65±9.2	88.52±7.7
Total	298	81.23±22.8	109.54±19.5

SD: Standard deviation.

Table-2: One-way analysis of variance (ANOVA) scores for academic stress.

	Sum of Squares	df	Mean Square	F	*p*-value
Between Groups	90838.037	3	30279.346	402.300	0.001
Within Groups	22128.057	294	75.266		

Table-3: Post-Hoc analysis using academic stress as a dependent variable.

Class	levels	Sig.	95% Confidence Interval	
			Lower Bound	Upper Bound
First Year	Second Year	0.036	0.17	7.62
	Third Year	0.000	28.14	35.54
	Final Year	0.000	36.91	44.28
Second Year	First Year	0.036	-7.62	-0.17
	Third Year	0.000	24.28	31.60
	Final Year	0.000	33.05	40.35
Third Year	First Year	0.000	-35.54	-28.14
	Second Year	0.000	-31.60	-24.28
	Final Year	0.000	5.13	12.38
Final Year	First Year	0.000	-44.28	-36.91
	Second Year	0.000	-40.35	-33.05
	Third Year	0.000	-12.38	-5.13

* The mean difference is significant at the 0.05 level.

Table-4: One-way analysis of variance (ANOVA) scores for emotional intelligence (EI).

	Sum of Squares	df	Mean Square	F	*p*-value
Between Groups	131100.381	3	43700.127	523.138	0.001
Within Groups	24559.176	294	83.535		

Table-5: Post-Hoc analysis using emotional intelligence (EI) as a dependent variable.

Class	levels	Sig.	95% Confidence Interval	
			Lower Bound	Upper Bound
First Year	Second Year	.001	-19.04	-11.19
	Third Year	.001	-28.21	-20.41
	Final Year	.001	-61.01	-53.24
Second Year	First Year	.001	11.19	19.04
	Third Year	.001	-13.05	-5.34
	Final Year	.001	-45.86	-38.17
Third Year	First Year	.001	20.41	28.21
	Second Year	.001	5.34	13.05
	Final Year	.001	-36.64	-29.00
Final Year	First Year	.001	53.24	61.01
	Second Year	.001	38.17	45.86
	Third Year	.001	29.00	36.64

* The mean difference is significant at the 0.05 level.

Table-6: Correlation between emotional intelligence (EI) and study levels.

Emotional Intelligence		
Spearman's rho	Correlation Coefficient	0.902**
	Sig. (2-tailed)	0.001
	n	298

**. Correlation is significant at the 0.01 level (2-tailed).

Table-7: Correlation between academic stress and study levels.

Academic Stress		
Spearman's rho	Correlation Coefficient	-0.861**
	Sig. (2-tailed)	0.001
	n	298

**. Correlation is significant at the 0.01 level (2-tailed).

Table-8: Correlation between emotional intelligence (EI) and academic stress.

Academic Stress		
Emotional Intelligence	Pearson Correlation	-0.766**
	Sig. (2-tailed)	0.001
	N	298

**. Correlation is significant at the 0.01 level (2-tailed).

academic levels (Table 7).

Finally, there was significant negative relationship between EI and academic stress (Table 8).

Discussion

The current study is the first in Pakistan to explore the correlation between EI and academic stress among dental students.

To reach certain ambitions in life, everyone needs to set certain goals. The effort to achieve these goals has the potential to fill the daily routine into with stresses and emotions. Those who are emotionally stable can handle certain difficult situations associated with stressful life.[12]

In the present study, 67.11% subjects were females. A study[13] suggested that females outnumber males in university admissions, especially in subjects allied with medicine. In the subject of undergraduate medicine and dentistry studies, the male-to-female ratio worldwide has been reported to be 1:1.31. A Pakistani study[14] carried out in Lahore, strengthened the evidence of female predominance.

In the present study, the class-wise distribution of EI score underwent a gradual increase from the first year to the final year. Srivastava et al.[15] showed similar results. Shetty et al.[16] showed a mean EI score of 102 while evaluating EI of first year medical students. These variations in the mean EI scores may be attributed to the differences in socio-demographic properties, sample size, sampling techniques, and most importantly, the instruments used for determination of EI. In the current study, there was a gradual increase of EI from the first to the final year, showing the importance of teaching and learning methods which incorporate certain EI trends in the students' overall training. Although not officially implemented, there is a spark of EI training in the institution where there is gradual build-up of soft skills, including communications skills, and, hence, overall EI. In medical education the importance of this hidden curriculum[17,18] is an established fact and is as important as the taught courses. Such components of the hidden curriculum may be missing in any institution, leading to overall lack of improvement in the students' EI level. These results cannot be wholly attributed to a fault in the teaching system, as a student's ability to learn and accommodate certain EI traits also need improvement. Saibani et al.[19] evaluated EI scores of engineering students in the first grade and compared them with the EI scores at exit level after 4-5 years. There was no significant change in the overall EI score from first grade to the exit level.

The total mean academic score of all classes in the current study was 109.54±19.5 with a trend of decreasing stress levels from the first to the final year.

A number of studies evaluating stress levels and their effect on the academic life of dental students considered the students as experiencing moderate to severe levels of stress.[20-24] Nearly all studies reported a total mean DES score in the range of 76 to 114 although there is a difference in the total mean score among different studies. The results of these studies[6,20-24] clearly are in accordance with the results of the present study.

A few studies have demonstrated different results. Naidu et al[6] and Dahan et al.[24] showed that there is a variation in the levels of stress among dental students according to their age, gender and, most importantly, academic stage. They showed that dental students report higher levels of stress in the final years compared to the first and second years. Demographic and social variables, methods of teaching and the curriculum structure may vary across the globe and may have an effect on the overall DES score.[6,24]

The current study's findings related to academic stress among undergraduate dental students are similar to those of Saddki et al.[25] in Malaysia.

The finding of the current study about a possible a link between EI and academic stress among dental students is in agreement with the results of worldwide studies.[22-25] The ability to recognise one's own emotions and those of others and to use them to manage emotional problems positively is the key concept of EI. Moreover, timely conflict resolution and the ability to stay calm and focussed in stressful situations are good EI indicators. Theoretically students'

stress levels must rise in response to their study levels and involvement in clinical patient care. But their levels of EI also increase and they perceive less stress.[22,23]

It is recommended that EI training programmes must be used in the basic dentistry curriculum. This can be accomplished by recruiting professionals trained in health professional education. The Pakistan Medical and Dental Council (PMDC) can play a key role in designing and implementing strategies to be incorporated into the curriculum to help students in this regard.

Conclusion

There was a gradual increase in EI from the first year to the final year, showing the importance of teaching and learning methods which incorporate certain EI trends in the overall training of dental students.

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