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The Correlation among Emotional Intelligence, Motivated Strategies for Learning and the Academic Performance of Dental Students in Isfahan University of Medical Sciences during 2017-2018

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Abstract

Background & Objective: Most researchers consider emotional intelligence, motivational beliefs, and self-regulated learning strategies as the important components of academic performance. This study aimed to evaluate the relationship between emotional intelligence and motivational strategies for learning with the academic performance in dental students of Isfahan University of Medical Sciences, Isfahan, Iran.

Materials and Methods: This cross-sectional, descriptive-analytical study was performed on 196 dental students (103 female and 93 male students) in the academic year of 2017-2018. Data were collected using Bradberry-Greaves' emotional intelligence test (2006) and Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich and De Groot. In addition, data analysis was performed in SPSS version 22 using Pearson's correlation coefficient and the independent t-test.

Results: According to the results, there was a direct, significant relationship between emotional intelligence and motivational strategies for learning (Pvalue<0.001). Meanwhile, no significant association was found between academic performance and emotional intelligence (P>0.05). On the other hand, a direct significant correlation was reported between academic performance and motivational strategies for learning (P=0.042).

Conclusion: According to the results, emotional intelligence indirectly affected academic performance with the mediating role of motivational strategies for learning.

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Introduction

Academic life is one of the most important aspects of a person's life that significantly affects other aspects and dimensions (1). Various factors affect the academic performance of individuals, which are divided into four categories of individual, institutional, family and social factors by education experts. Among the individual factors, emotional intelligence and motivational strategies are of paramount importance (2,3). According to the literature, emotional intelligence affects academic success, job success, and interpersonal relationships. In general, this type of intelligence involves a set of social competences and skills that affect a person's abilities to detect, comprehend, and manage emotions, problem-solving and compatibility (4). Students with high emotional intelligence can better understand the emotions of others and their own and can overcome the unpleasant feelings caused by the educational environment and family (5).

Emotional intelligence includes components such as self-awareness, self-management, social awareness, and communication management (5-7). Contrary to general intelligence that changes rarely after adolescence, emotional intelligence is mostly learned and shaped by learning experiences during life (7-9). Motivational strategies for learning facilitate the improvement of the conditions for academic achievements and the learning process (6). Motivation is the process

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that initiates, guides, and maintains goal-oriented behaviors (10). Motivational strategies for learning are divided into two categories of motivational (e.g., Intrinsic evaluation, self-efficacy, and test anxiety) and self-regulated (e.g., cognitive and self-regulatory strategies) strategies (11, 12).

In a research by Pourasghar et al. (13) self-efficacy and learning strategies had the most impact on the academic performance of BSc students of Payam-e Noor University in Ardabil, Iran. In another research, Taei et al. (14) found a positive, significant relationship between the emotional intelligence and the creativity and academic performance of students in the Islamic Azad University, Ahvaz Branch, Ahvaz, Iran. Shokouhi et al. (15) reported a positive, significant correlation between self-regulated learning, academic hope, and academic performance. According to the results obtained by Hasegawa et al. in Japan (16), emotional intelligence scores were higher in students with better performance, compared to those with weaker performance. In a study conducted by Mahasneh et al. (17) in Jordan, a significant relationship was observed between emotional intelligence and metacognitive skills with the academic performance of students.

Effective steps can be taken toward the increase of students' efficiency by proving the effects of self-regulated learning strategies and motivational beliefs on their academic performance. This issue can help counselors and other executive managers to lead students to greater academic success by making accurate plans in educational, physical, mental, and psychological areas. This study aimed to determine the emotional intelligence score and motivational strategies of dental students and their relationship with the academic performance so that effective steps could be taken toward more success and more accurate performance of students in the educational system.

Materials and Methods

This cross-sectional, descriptive study was performed on 196 third to six-year dental students (103 female and 93 male students) of Isfahan University of Medical Sciences, Isfahan, Iran in the academic year of 2017-2018. The subjects were selected by simple random sampling, and the exclusion criteria were passing supplementary courses, unwillingness to participate in the study, and incomplete questionnaires. Data related to the literature, theoretical foundation, and a primary model presentation was collected using the library method to analyze books, articles, journals, research projects, and Internet databases.

The research tools included Bradberry-Greaves' emotional intelligence test, evaluation of which was carried out in the study by Ganji et al. (5). The questionnaire encompasses four dimensions of self-awareness (items 1-6), self-management (items 7-15), social awareness (items 16-20), and communication management (items 20-28). In total, the questionnaire includes 28 items scored based on a six-point Likert scale (from 1=never to 6=always). A total emotional intelligence score of 28-78 is indicative of low emotional intelligence score, whereas the ranges of 78-128 and 128-168 show moderate and high emotional intelligence, respectively.

In addition, the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich was applied to assess motivational beliefs. The validity of the tool was previously standardized by Babaei Amiri et al. (18). The tool includes two dimensions of motivational beliefs (items 1-24 and 3-41) and self-regulated learning strategies (items 25-38 and 42-47). The dimension of motivational beliefs comprises three subscales of "self-efficacy", "Intrinsic valuation", and "test anxiety". In addition, the dimension of self-regulated learning strategies includes two subscales of using "cognitive" and "self-regulatory" strategies. Overall, the questionnaire has 47 items scored based on a five-point Likert scale, from completely disagree (one score) to completely agree (five scores). Notably, items 24, 27, and 39 are scored reversely, and the score range of the tool is 47-235.

The qualitative and quantitative content validity of the questionnaires was confirmed by

10 experts. Moreover, their reliability was confirmed at a Cronbach's alpha of 0.79 following the completion of the tools by 20 students. Furthermore, the students' GPA was considered to evaluate their academic performance. Data analysis was performed in SPSS version 22 using Pearson's correlation coefficient and the independent t-test. It is worth noting that a P-value of less than 0.05 was considered statistically significant.

Results

In this study, 93 students (47.4%) were male and 103 (52.6%) were female. In addition, the range of change in students' GPA was 18.34-12.69, and their mean GPA was 15.72±1.12. Furthermore, the lowest and highest GPAs were reported to be 12.69 and 18.34, respectively. According to the results, the mean total score of emotional intelligence in students was 116.32±14.99, which was indicative of the moderate intelligent score of students. The normal distribution of the data was confirmed based on the results of the statistical test and based on the Kolmogorov-Smirnov test. In addition, the total mean score of motivational strategies for the learning of students was reported at 165.76±19.49 (Table 1). respectively. Regarding the place of residence, 81.6% of the students were living in dormitories and the rest were residing in other places. In terms of marital status, 88.8% of the students were single and the rest were married. According to the evaluation of the counseling needs of students, their most and least counseling needs were related to the fields of occupation and individual growth (with a mean of 2.59±0.80 and 2.55±0.73, respectively), and family, marriage and emotional-psychological fields (with a mean of 2.42±0.82 and 2.47±0.73, respectively). Overall, female students had more counseling needs, compared to male participants (P=0.018), which applied to most areas. However, no significant difference was observed between male and female students regarding counseling needs in the field of family and marriage (Table1).

Table 1: Mean scores of emotional intelligence dimensions and learning motivational strategies

Dimensions of learning motivational strategies	Mean score	Standard deviation	Dimensions of emotional intelligence	Mean score	Standard deviation
Motivational beliefs (total)	94/26	10/32	Self-awareness	26/68	4/12
Self-efficacy	33/56	5/16	Self-management	24/75	5/47
Intrinsic value	43/75	6/64	Social awareness	20/76	5/12
test anxiety	16/96	4/98	Communication management	34/10	5/51
Self-regulatory learning strategies	71/87	10/19	Emotional intelligence (Total)	116/32	14/99
Cognitive strategies	57/69	8/74			
Self-regulatory strategies	14/24	2/37			
Learning motivation strategies (Total)	165/76	2/37			

The results demonstrated a direct, significant relationship between the mean total score of emotional intelligence and motivational strategies of students (P<0.001). The association between the dimensions of emotional intelligence with the components of motivational strategies for the learning of students is shown in Table 2.

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Table 2: Relationship between the dimensions of emotional intelligence and components of students' motivational learning strategies

Learning motivational strategies / Emotional Intelligence	Self-regulatory learning strategies			Motivational beliefs			
	Self-regulatory strategies	Cognitive strategies	Total	Intrinsic value	exam stress	Efficacy	Total
Self-awareness (P value/r)	<0/001	0/376	<0/001	0/001	0/08	<0/001	0/002
	0/326	0/064	0/299	0/241	-0/126	0/258	0/223
Self-management(P value/r)	<0/001	0/027	<0/001	<0/001	0/014	<0/001	<0/001
	0/338	0/158	0/377	0/329	-0/175	0/356	0/305
Social awareness(P value/r)	<0/001	0/19	<0/001	<0/001	0/349	<0/001	<0/001
	0/326	0/094	0/314	0/321	-0/067	0/249	0/299
Communication management (P value/r)	<0/001	0/063	<0/001	<0/001	0/002	<0/001	<0/001
	0/375	0/133	0/358	0/335	-0/215	0/356	0/29

According to Table 3, there was a direct, significant relationship only between the self-management dimension of emotional intelligence and the academic performance of students (P=0.029). On the other hand, no significant association was found between the mean total score of emotional intelligence and academic performance (P=0.275). Moreover, the dimension of motivational beliefs from the dimensions of motivational strategies for learning had a direct, significant relationship with the academic performance of students (P=0.038). Notably, there was a significant but indirect association between test anxiety and the academic performance of students (P=0.011).

Table 3: Relationship between emotional intelligence dimensions and learning motivational strategies with students' academic performance

Dimensions of learning motivational strategies	Relation to academic performance/ P value(r)	Dimensions of emotional intelligence	Relation to academic performance/ P value(r)
Motivational beliefs (total)	0/038(0/196)	Self-awareness	0/625(0/035)
Self-efficacy	<0/001(0/26	Self-management	0/029(0/176)
Intrinsic value	0/068(0/131)	Social awareness	0/488(0/05)
test anxiety	0/011(-0/182)	Communication management	0/242(0/084)
Self-regulatory learning strategies	0/114(0/113)	Emotional intelligence (Total)	0/275(0/078)
Cognitive strategies	0/395(1/061)		
Self-regulatory strategies	0/099(0/118)		
Learning motivation strategies (Total)	0/042(0/19)		

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According to the results, there was a direct, significant relationship between the mean total score of motivational strategies for learning and academic performance (P=0.042). The mean scores of emotional intelligence dimensions and motivational strategies for learning and their relationship with students' gender are presented in Table 4.

Table 4: Mean scores of emotional intelligence dimensions and learning motivational strategies and its relationship with students' gender

Dimensions of learning motivational strategies	Mean score in females (mean±SD)	Mean score in males (mean±SD)	P value	Dimensions of emotional intelligence	Mean score in females (mean±SD)	Mean score in males (mean±SD)	P value
Motivational beliefs (total)	93/85±10/37	94/71±10/29	0/564	Self-awareness	26/45±4/2	26/92±4/05	0/429
Self-efficacy	32/83±5/02	34/35±5/21	0/039	Self-management	34/39±5/34	35/16±5/62	0/325
Intrinsic value	43/69±6/51	43/83±6/81	0/884	Social awareness	20/42±2/85	21/14±3/36	0/105
test anxiety	17/33±4/74	16/53±5/22	0/261	Communication Mmanagement	33/84±5/25	34/38±5/25	0/501
Self-regulatory learning strategies	71/54±11/09	72/24±9/14	0/636	Emotional intelligence (Total)	115/13±14/06	116/63±15/92	0/243
Cognitive strategies	14/19±2/26	14/3±2/5	0/754				
Self-regulatory strategies	57/47±9/5	57/93±7/84	0/714				
Learning motivation strategies (Total)	164/7±21/22	166/95±17/41	0/422				

The results were indicative of a lack of a significant difference between male and female students in terms of the mean scores of emotional intelligence and its dimensions (P=0.243). Furthermore, only the mean score of the self-efficacy dimension was higher in male students, compared to female subjects (P=0.039).

Discussion

The present study was performed to evaluate the relationship between emotional intelligence and motivational strategies for learning with the academic performance in dental students of Isfahan University of Medical Sciences in the academic year of 2017-2018. According to the results, the mean score of the emotional intelligence of students was reported to be moderate. All dimensions of emotional intelligence had a direct, significant relationship with the component of self-efficacy and Intrinsic value (a component of motivational strategies for learning) (P<0.001). On the other hand, no significant correlation was found between the dimensions of self-awareness and social awareness with the component of test anxiety. In line with our findings, Babaei Amiri, Soleimani, and Salami indicated a significant association between the dimensions of emotional intelligence and self-efficacy (18-20).

Moreover, the self-regulated learning strategies in general and the component of self-regulated strategies had a direct, significant relationship with each dimension of emotional intelligence. However, the dimension of cognitive strategies had a direct, significant association only with the component of self-management. Meanwhile, no significant correlation was reported between other dimensions of emotional intelligence and this strategy (P>0.05). Furthermore, a direct, significant relationship was observed between all dimensions of emotional intelligence and the subscale of self-regulated strategies (P<0.001). In a research conducted to evaluate the relationship between emotional intelligence with self-regulation and learning techniques of first-grade high-school students in

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Jahrom, Iran, a significant correlation was found between the emotional intelligence and self-regulation of students, which is consistent with our findings (21).

Furthermore, a direct, significant relationship was observed between emotional intelligence and motivational strategies for learning (P<0.001). In a study, Ebrahimi assessed the relationship between personality traits, emotional intelligence, self-regulated learning strategies, and academic motivation of students, reporting that one unit increase in the score of emotional intelligence increased the scores of motivational strategies of students (22). According to the results of the current research, there was a direct, insignificant relationship between emotional intelligence and academic performance of students (P>0.05). In other words, the emotional intelligence of students could not have a direct, strong association with their academic performance. The results obtained by Taei were indicative of a positive, significant relationship between emotional intelligence and creativity and academic performance of students in Islamic Azad University, Ahvaz Branch (14). Moreover, Bafrooie and Brakett reported a significant relationship between emotional intelligence and academic performance (23, 24).

While there was no strong relationship between emotional intelligence and academic performance, the results of previous studies and the fact that high emotional intelligence contributes to the increase of academic performance by affecting the simplification of thinking, emotional cognition and management of emotions, as well as increased control and strengthened effective coping strategies have necessitated the emphasis on this topic. In the present study, we assessed the relationship between two dimensions of motivational strategies for learning and its five subscales with academic performance (students' GPA). According to the results, there was a direct, significant relationship between motivational beliefs of students and their academic performance. Meanwhile, there was a weak, insignificant association between the self-regulated learning strategies and the academic performance of students. In the research by Bafrooie, which was conducted to predict the academic performance of female students based on emotional intelligence, motivational beliefs, and learning strategies, a significant relationship was observed between motivational beliefs and academic performance (23).

Overall, people's beliefs about their abilities, the level of importance of their assignments, and how they think, discover and remember can affect academic performance. In fact, people with strong motivational beliefs experience higher levels of academic achievement since they have higher self-efficacy, higher self-esteem, and lower test anxiety. According to the results of this research and other studies, it is possible to improve students' emotional intelligence and increase motivation by providing suitable conditions for self-efficacy growth and reducing students' test anxiety by professors and teachers and holding educational seminars in line with the increasing of educational educators' knowledge of motivational strategies and emotional intelligence and its effect on academic performance (22, 23).

One of the major drawbacks of the present study was including only the dental students in Isfahan University of Medical Sciences. It is recommended that similar studies be performed on larger statistical populations in different cities of the country and other academic grades.

Conclusion

According to the results of the present study, there was a direct, significant relationship between emotional intelligence and motivational strategies for learning with the academic performance of students. Meanwhile, an insignificant association was found between academic performance and emotional intelligence. Therefore, emotional intelligence seems to affect academic performance indirectly with the mediating role of motivational strategies for learning.

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Conflicts of Interest: The authors declare that there are no conflicts of interest.

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