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Investigation of the Effect of Academic Motivation and Academic Self-Efficacy on Academic Achievement in Dentistry Students: An Analytical Survey

Diş Hekimliği Öğrencilerinde Akademik Motivasyon ve Akademik Öz Yeterliğin Akademik Başarıya Etkisinin Araştırılması: Analitik Bir Çalışma

Betül TAŞ[a], Zeynep GÜNGÖRMÜŞ[b], Metin GÜNGÖRMÜŞ[a]

[a]Gaziantep University Faculty of Dentistry, Department of Oral and Maxillofacial Surgery , Gaziantep, TURKEY
[b]Gaziantep University Faculty of Health Sciences, Department of Nursing, Gaziantep, TURKEY

ABSTRACT Objective: Dentistry students have many academic duties and responsibilities that they must perform and succeed during their university life. Successful and productive learning is closely related to academic motivation and academic self-efficacy. However, in order to be a good dentist, dental students must be successful in theoretical and clinical fields. The aim of this study was to investigate the levels of academic motivation and academic self-efficacy beliefs of dentistry students and to evaluate the effect of these factors on academic achievement. **Material and Methods:** This study was conducted on 346 students studying at Gaziantep University Faculty of Dentistry in 2018-2019 academic year. The data of the study was collected by using three measurement tools: Descriptive Characteristics form, Academic Motivation Scale and Academic Self-efficacy Scale. The obtained data were evaluated by using SPSS 22 program, Students' t test, ANOVA test, Kruskal-Wallis test and correlation analysis. **Results:** The students' self-efficacy beliefs (16.8±3.8), total academic motivation level (66.9±12.3) and the sub-dimensions; self-exceeding (23.2±4.2), discovery (24.3±4.9) and use of knowledge (19.3±4.8) mean scores were high, and there was a negative correlation between academic motivation and self-efficacy ($p < 0.05$). In addition, there was a positive correlation between academic motivation and academic achievement ($p < 0.05$). **Conclusion:** The students can be more successful in education if their academic motivation is supported. In addition, it should be examined how these features should be gained in longitudinal prospective studies.

Keywords: Academic motivation; academic self-efficacy; dental students

ÖZET Amaç: Diş hekimliği öğrencilerinin üniversite hayatı boyunca yerine getirmeleri ve başarılı olmaları gereken birçok akademik görevleri ve sorumlulukları bulunmaktadır. Öğrencilerin başarılı ve verimli bir öğrenim hayatı geçirmeleri, akademik güdülenme ve akademik öz yeterlik seviyeleri ile yakından ilişkilidir. Bununla birlikte diş hekimliği öğrencilerinin iyi bir hekim olabilmeleri için teorik ve klinik alanlarda başarılı olmaları zorunludur. Bu çalışma, diş hekimliği öğrencilerinin akademik güdülenme ve akademik öz yeterlik inancı düzeylerinin incelenmesi ve bu faktörlerin akademik başarı üzerine etkisinin değerlendirilmesi amacıyla yapılmıştır. **Gereç ve Yöntemler:** Bu çalışma, 2018-2019 eğitim-öğretim döneminde Gaziantep Üniversitesi Diş Hekimliği Fakültesi'nde öğrenim gören 346 öğrenci üzerinde yürütülmüştür. Çalışmanın verileri, Tanımlayıcı Özellikler Formu, Akademik Güdülenme Ölçeği ve Akademik Öz Yeterlik Ölçeği olmak üzere üç ölçme aracı kullanılarak toplanmıştır. Elde edilen veriler SPSS 22 programı kullanılarak, Students' t testi, ANOVA testi, Kruskal-Wallis testi ve korelasyon analizleri ile değerlendirilmiştir. **Bulgular:** Öğrencilerin akademik öz-yeterlik inançları (16,8±3,8), akademik güdülenme düzeyi toplam puan ortalaması (66,9±12,3) ile alt boyutlarından kendini aşma (23,2±4,2), keşif (24,3±4,9), bilgiyi kullanma (19,3±4,8) puan ortalamalarının yüksek düzeyde olduğu ve akademik güdülenme ile akademik öz yeterlik arasında negatif anlamlı ilişki olduğu saptanmıştır ($p<0,05$). Bunun yanı sıra akademik güdülenme ile akademik başarı arasında pozitif korelasyon görülmüştür ($p<0,05$). **Sonuç:** Öğrencilerin akademik güdülenmeleri desteklenirse eğitimde daha başarılı olabilecekleri söylenebilir. Ayrıca ileriye dönük longitudinal çalışmalarda bu özelliklerin nasıl kazandırılması gerektiği irdelenmelidir.

Anahtar Kelimeler: Akademik güdülenme; akademik öz yeterlik; diş hekimliği öğrencileri

Correspondence: Betül TAŞ
Gaziantep University Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, Gaziantep, TURKEY/TÜRKİYE
E-mail: betultas@hotmail.com

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Dentistry students have many academic duties and responsibilities that they need to accomplish and succeed in throughout their university life. Successful and productive learning is closely related to academic motivation and academic self-efficacy. Academic motivation is defined as "generating the energy required for academic work" and academic self-efficacy is defined as "the ability to successfully complete a job in an academic sense". Dentistry education consists of two areas: theoretical and clinical. Students must be successful in both of these areas in order to become a good dentist.

There are many academic and clinical responsibilities both during education and professional life in dentistry. Academic motivation is one of the most important factors in the fulfillment of these responsibilities. For dentistry students, in order to take an active part in the learning process, they must be willing to participate, in other words, motivated.

Academic self-efficacy is expressed as the current belief that students can start, continue and successfully complete an academic job. Students with high self-efficacy beliefs are more willing to engage in activities throughout their education, make more effort for the activities to be undertaken and produce more effective solutions to the challenges faced.[1,2]

The aim of this study was to determine the relationship between academic motivation and self-efficacy levels of dentistry students.

MATERIAL AND METHODS

POPULATION AND SAMPLE OF THE RESEARCH

The population of the study consisted of 392 dentistry students studying at Gaziantep University Faculty of Dentistry in the 2018-2019 academic year and the sample size was 346 students. The G Power program was used to calculate the sample size of the study. The power analysis was tested prior to commencement of the research using the results of a similar study in the literature (Comparison of the two groups mean: Type I Error; 0.05, Type II Error;0.20, the power of the test;0.80).[3]

DATA COLLECTION

After giving information about the aim, method and scales of the study to the 1st, 2nd, 3rd, 4th and 5th grade students who participated in the study voluntarily, three measuring tools "Descriptive Characteristics Form", "Academic Motivation Scale" and "Academic Self-Efficacy Scale" were used to collect data.

DESCRIPTIVE CHARACTERISTICS FORM

This form included questions about age, marital status, department, grade, gender, income and expense perception, education status of the parents number of years lost since starting school, the average grade point average (GPA) and the reason for choosing dentistry etc. to characterize the sample.

ACADEMIC MOTIVATION SCALE

In our study, the academic motivation scale developed by Bozanoğlu in 2004 was used.[4] This scale consists of 20 items and is designed as 5-point likert type. The students mark according to their suitability (1 = Strongly disagree, 5 = Strongly agree). The range of points in the scale is 20-100, as the score gets higher, academic motivation of the individual gets higher. Only item 4 of the scale is scored reversely. This scale consists of three sub-dimensions: self-transcendence, use of knowledge and discovery.

ACADEMIC SELF-EFFICACY SCALE

Academic self-efficacy scale developed by Schwarzer and Jerusalem (1995) was used in our study.[5] The scale was adapted to Turkish by Yılmaz, Gürçay and Ekici.[6] This scale, which has no sub-dimension, consists of 7 items and is designed as 4-point likert type. The score to be taken from the scale is in the range of 7-28 points, as the score gets higher, self-efficacy of the individual gets higher.

DATA ANALYSIS

The data obtained from the study were evaluated with SPSS 22 program. Data, were analyzed with Students' t test, one way ANOVA and correlation analysis. Post hoc analysis were performed using LSD test. Normal distribution of research data was evaluated by Kolmogorov-Smirnov test >0.05 (n>70). Significance level was taken as $p<0.05$.

ETHICS

Ethics approval form (357-23/01/2019) was obtained from the Clinical Research Ethics Committee of Gaziantep University. Declaration of Helsinki principles were followed in this study and the consent of the students who participated in the study was obtained for conducting the study.

RESULTS

Descriptive characteristics of the students participating in the study are shown in Table 1.

The mean age of the students included in the study was 21.47 (±2.07), 57.8% were female, 42.2% were male, 20.2% were 1st grade, 28.3% were 2nd grade, 17.3% were 3rd grade, 19.7% were 4th grade and 14.5% were 5th grade students (Table 1).

There was no significant difference between the genders in terms of academic motivation and sub-dimensions (p> 0.05), and academic self-efficacy levels of women (16.84±3.1) were higher than men (15.99±3.2) and there was a statistically significant difference between genders (t=2.458, p=0.014) (Table 2).

TABLE 1: Descriptive characteristics of the students who participated in the study.

		n (%)		n (%)
Gender			**The environment**	
	Female	200 (57.8)	Family house	126 (36.4)
	Male	146 (42.2)	Student house	70 (20.3)
High School			Dormitory	92 (26.6)
	Anatolian High School	221 (63.9)	Other	58 (16.8)
	Science High School	74 (21.4)	**Grade**	
	Other	51 (14.7)	1. grade	70 (20.2)
Marital status			2. grade	98 (28.3)
	Married	6 (2.3)	3. grade	60 (17.3)
	Single	340 (97.7)	4. grade	68 (19.7)
Income generating job		5. grade	50 (14.5)	
	Working	10 (2.9)	**Years failed in dental education**	
	Non-working	336 (97.1)	0	231 (66.8)
Income and expense perception			1	90 (26.0)
	Equal	175 (51.3)	2	16 (4.6)
	Lower income	134 (38.7)	Other	9 (2.6)
	Higher income	37 (10.7)	**Willingness to choose the profession of dentistry**	
Education status of the mother			Willing	243 (70.2)
	Primary school	97 (28.1)	Unwilling	103 (29.8)
	Secondary school	52 (15.1)	**Reasons for choosing dentistry**	
	High school	84 (24.3)	Willingly	136 (39.3)
	University	70 (20.2)	Job opportunity	65 (18.8)
	Uneducated	43 (12.4)	Recommendation	44 (12.7)
Education status of the father			Financial reasons	19 (5.5)
	Primary school	71 (20.5)	Test score	66 (19.1)
	Secondary school	35 (10.1)	Social Status	12 (3.5)
	High school	73 (21.1)	Other	4 (1.2)
	University	155 (44.8)	**Compatibility of dentistry with the student's interest**	
	Uneducated	12 (3.5)	Compatible	215 (62.1)
Place where the majority of life (2/3) is spent			Incompatible	35 (10.2)
	Village	25 (7.2)	Indecisive	96 (27.7)
	Town	60 (17.3)	**GPA [mean(standard deviation)]**	3.1 (0.01)
	City	149 (43.1)		
	Metropol	112 (32.4)		

GPA: Grade point average

TABLE 2: Relationship between descriptive characteristics and academic motivation, academic self-efficacy and GPA.

	Self- exceeding Mean (SD)	Use of Knowledge Mean (SD)	Discovery Mean (SD)	Academic Motivation Mean (SD)	Self-Efficacy Mean (SD)
Gender					
Female	23.18 (4.6)	23.39 (3.25)	20.51 (3.9)	68.73 (10.5)	16.84 (3.1)
Male	22.94 (4.4)	22.74 (3.6)	19.96 (4.0)	66.76 (11.0)	15.99 (3.2)
t, p	.495, .621	1.745, .082	1.292, .197	1.685, .093	**2.458, .014**
High School					
Anatolian High School	23.28 (4.4)	23.12 (3.2)	20.38 (3.6)	68.14 (9.9)	16.42 (3.0)
Science High School	22.47 (5.2)	22.99 (3.8)	19.78 (5.0)	66.58 (13.0)	16.57 (3.3)
Other	23.16 (4.1)	23.21 (3.7)	20.69 (3.7)	68.86 (10.6)	16.49 (3.3)
F, p	.860, .424	.067, .935	.904, .406	.808, .447	.063, .939
Marital status					
Married	23.66 (5.7)	22.33 (4.5)	21.50 (3.8)	69.28 (14.8)	16.16 (4.8)
Single	23.06 (4.5)	23.14 (3.4)	20.26 (3.9)	67.88 (10.7)	16.50 (3.1)
t, p	.316, .752	.571, .568	.751, .453	.314, .754	.260, .795
Income generating job					
Working	24.60 (5.2)	24.50 (5.1)	22.20 (4.2)	73.03 (13.5)	16.10 (5.3)
Non-working	23.04 (4.5)	23.06 (3.4)	20.21 (3.9)	67.72 (10.6)	16.46 (3.1)
t, p	1.060, .290	1.299, .195	1.562, .119	1.536, .125	.364, .716
Income and expense perception					
Equal	23.48 (4.3)	23.30 (3.2)	20.38 (3.6)	68.45 (10.1)	16.54 (2.8)
Lower income	22.44 (4.8)	22.84 (3.6)	19.70 (4.2)	66.61 (11.4)	16.42 (3.5)
Higher income	22.97 (4.8)	23.08 (3.8)	21.49 (4.3)	68.85 (11.2)	16.60 (3.6)
F, p	1.926, .147	.649, .523	**3.159, .044***	1.285, .278	.078, .925
*higher income >lower income p= (0.016)					
Mother education status					
Primary school	22.80 (4.9)	22.63 (3.5)	20.22 (4.0)	66.93 (11.7)	16.66 (3.2)
Secondary school	23.13 (4.1)	23.52 (2.8)	20.42 (3.7)	68.65 (9.3)	16.61 (3.2)
High school	22.64 (3.9)	23.09 (3.3)	19.75 (3.7)	66.89 (9.7)	16.70 (3.2)
University	23.37 (5.1)	23.13 (3.9)	20.32 (4.3)	68.12 (11.5)	15.96 (3.1)
Uneducated	24.00 (4.5)	23.70 (3.3)	21.14 (3.8)	70.56 (10.3)	16.20 (2.7)
F, p	.783, .537	.971, .423	.903, .463	1.106, .354	.749, .559
Father education status					
Primary school	22.93 (4.8)	23.20 (3.5)	20.25 (3.9)	67.61 (11.6)	16.25 (3.0)
Secondary school	22.97 (4.8)	23.06 (3.2)	20.17 (4.1)	67.95 (11.0)	17.38 (3.4)
High school	23.93 (4.2)	23.23 (3.4)	20.53 (4.0)	69.57 (9.6)	16.56 (2.9)
University	22.77 (4.5)	23.19 (3.3)	20.17 (3.9)	67.30 (10.7)	16.34 (3.3)
Uneducated	23.00 (4.1)	21.25 (4.5)	20.25 (4.2)	66.69 (11.8)	16.50 (2.5)
F, p	.820, .513	.933, .445	.110, .979	.600, .663	.865, .485
Place where the majority of life (2/3) is spent					
Village	22.16 (4.5)	23.20 (2.8)	20.64 (3.8)	67.60 (10.9)	16.15 (2.7)
Town	23.05 (5.5)	23.23 (4.3)	19.94 (4.6)	67.55 (13.5)	16.77 (3.2)
City	23.23 (4.5)	22.98 (3.2)	20.26 (3.9)	67.86 (10.5)	16.49 (3.3)
Metropol	23.10 (4.1)	23.21 (3.3)	20.40 (3.7)	68.20 (10.7)	16.39 (3.0)
F, p	.394, .757	.132, .941	.252, .860	.056, .983	.283, .838
The environment					
Family house	23.21 (4.3)	23.13 (2.9)	20.43 (4.0)	68.30 (10.0)	16.15 (2.9)
Student house	22.19 (4.5)	23.12 (3.3)	19.78 (3.4)	66.61 (9.8)	16.60 (3.5)
Dormitory	23.40 (4.8)	23.28 (3.7)	20.63 (3.9)	68.45 (11.7)	16.85 (3.0)
Other	23.45 (4.6)	22.87 (4.1)	20.01 (4.3)	67.92 (11.7)	16.50 (3.5)
F, p	1.162, .324	.162, .922	.744, .526	.457, .712	.894, .444

GPA: Grade point average

Academic motivation and academic self-efficacy scores of the students showed no significant difference according to work in an income generating job (p>0.05) (Table 2).

When the relationship between income perception and academic motivation and academic self-efficacy are evaluated; there was no significant difference between the grades in terms of academic self-efficacy, academic motivation and its sub groups; self-exceeding and use of knowledge scores (p> 0.05). However, discovery subgroup showed difference (F=3.159, p=0.044), and this difference was due to the relationship between the students those have higher income and lower income perception (p=0.016) (Table 2).

The grade levels showed no difference among academic self-efficacy, academic motivation and its subgroups; self-transcendence, use of knowledge (p>0.05), while there was significant difference with discovery (F=4.725, p=0.001). Post-hoc analysis showed that this difference is between 1st to 2nd (p=0.000), 1st to 3rd (p=0.015) and 2nd to 4th grades (p =0.003) (Table 3).

TABLE 3: The relationship between dental education and academic motivation, academic self-efficacy and GPA.

	Self- exceeding Mean (SD)	Use of Knowledge Mean (SD)	Discovery Mean (SD)	Academic Motivation Mean (SD)	Self-Efficacy Mean (SD)
Grade					
1. grade	23.47(3.6)	23.41(2.8)	21.55(3.9)	69.72(8.4)	16.31(3.2)
2. grade	22.02(5.1)	23.09(3.5)	19.14(3.6)	65.67(11.3)	16.74(3.2)
3. grade	23.06(4.3)	23.40(2.3)	19.88(3.5)	68.06(9.3)	17.08(2.5)
4. grade	23.94(4.9)	23.30(3.8)	21.00(4.3)	69.04(12.2)	15.85(3.0)
5. grade	23.46(4.0)	22.16(4.3)	20.22(3.9)	67.96(11.4)	16.34(3.8)
F, p	2.152, .074	1.250, .290	**4.725, .001***	1.768, .135	1.434, .222
*1st grade>2nd grade (p=0.000), 1st grade>3rd grade (p=0.015), 4th grade>2nd grade (p=0.003)					
Willingness to choose the profession of dentistry					
Willing	23.23(4.3)	23.31(3.3)	20.37(3.8)	68.49(10.3)	16.40(3.1)
Unwilling	22.71(5.2)	22.65(3.7)	20.01(4.1)	66.39(11.6)	16.64(3.1)
t, p	.891, .374	1.649, .100	.758, .449	1.664, .097	.636, .525
Years failed in dental education					
0	23.12(4.8)	23.12(3.5)	20.36(4.1)	68.10(11.2)	16.54(3.1)
1	22.76(4.0)	22.81(2.9)	19.91(3.4)	66.78(9.2)	16.52(3.1)
2	22.76(4.1)	24.00(3.8)	21.06(3.7)	68.38(8.8)	14.75(3.6)
Others	25.66(3.9)	24.55(4.3)	20.55(5.5)	72.86(13.4)	17.55(3.6)
F, p	1.050, .382	.853, .492	.795, .529	.869, .485	1.484, .207
Reasons for choosing dentistry					
Willingly	23.54(4.0)	23.70(3.5)	20.42(4.0)	69.40(10.3)	16.40(3.2)
Job opportunity	22.64(4.7)	23.01(2.6)	19.65(3.6)	66.64(10.2)	17.04(2.7)
Recommendation	22.59(5.1)	22.43(4.0)	20.33(3.3)	66.38(12.2)	16.19(3.6)
Financial reasons	21.95(5.2)	21.89(3.4)	20.48(5.0)	65.50(11.4)	15.49(3.5)
Test score	22.54(4.6)	22.71(3.2)	20.17(3.9)	66.65(10.4)	16.70(3.0)
Social Status	25.75(4.4)	22.91(3.2)	21.08(4.4)	71.08(10.9)	15.58(3.3)
Other	26.00(5.9)	25.50(4.1)	23.75(3.7)	76.25(12.7)	17.12(3.4)
F, p	1.688, .123	1.755, .108	.920, .481	1.605, .145	.972, .444
Compatibility of dentistry with the student's interest					
Compatible	23.61(4.3)	23.58(3.2)	20.58(3.9)	69.41(10.4)	16.32(3.0)
Incompatible	21.79(5.7)	21.24(5.5)	19.93(5.4)	62.99(15.5)	17.13(4.2)
Indecisive	22.29(4.4)	22.62(2.7)	19.68(3.4)	65.90(8.7)	16.80(3.0)
F, p	**4.075, .018***	**7.523, .001****	1.824, .163	**7.099, .001*****	1.354, .260

*compatible>incompatible (p=0.043), compatible>indecisive (p=0.019). **compatible>incompatible (p=0.001), compatible>indecisive (p=0.022). ***compatible>incompatible (p=0.002), compatible>indecisive (p=0.007).
GPA: Grade point average.

There was no significant difference between the number of years failed in dental education and academic motivation, its sub-dimensions, and academic self-efficacy scores (p>0.05) (Table 3).

When the compatibility of dentistry with the student's interest and the relationship between academic motivation and academic self-efficacy are examined, there was no significant difference in terms of discovery and academic self-efficacy score (p>0.05). However academic motivation (F=7.099, p=0.001), self-exceeding (F=4.075, p=0.018) and use of knowledge (F=7.523, p=0.001) showed a significant difference between the compatibility of dentistry to the student's interest. The difference on self-exceeding was found to be due to the thought of being compatible and incompatible (p=0.043), and being compatible and indecisive (p=0.019), and the difference on use of knowledge was found to be between being compatible and incompatible (p=0.001), and compatible and indecisive (p=0.022). The difference on academic motivation was found to be between the thought of being compatible and incompatible (p=0.002), and being compatible and indecisive (p=0.007) (Table 3).

Academic motivation, its sub-groups and academic self-efficacy showed no statistically significant difference with high school, marital status, mother's education level, place where the majority of life (2/3) is spent, the environment, the willingness to choose the profession of dentistry and the reasons for choosing dentistry (p>0.05).

There was no correlation between the students' GPA and academic self-efficacy (p>0.05), however there was a positive correlation between the GPA and academic motivation (r=0.203, p<0.001), self-exceeding (r=0.153, p<0.001), use of knowledge (r=0.137, p<0.05) and discovery (r=0.234, p=0.001).

Academic self-efficacy showed a negative correlation with academic motivation and its sub groups; self-exceeding (r=-0.238, p<0.001), use of knowledge (r=-0.243, p<0.05) and discovery (r=-0.235, p=0.001).

DISCUSSION

Academic motivation is defined as “generating the energy required for academic work”. In order to be academically successful, the student has to learn the subjects transferred in academic institutions. The student's need to be successful, his interest in reading and learning, whether he has set a goal for himself, the reality and functionality of his goals, the variables on which he has attributed his past success and failure, the perception of self-sufficiency in learning and why he learns all affect his motivation level.[4]

In our study, it was observed that there was no difference between genders in terms of academic motivation levels. Similarly, while the gender factor does not affect academic motivation, there are studies reporting that academic motivation is different in favor of women.[7,8]

Academic self-efficacy is defined as ‘the ability to successfully complete a job in an academic sense’. Besides both gender impact and the contrary has been reported on the literature, we found that academic self-efficacy levels of women were higher than men and there was a statistically significant difference between genders in our study.[9,10]

GPA is a criterion for measuring academic success and it can be said that as it increases, academic success increases. Even there are studies reporting that women have higher academic achievement, similar to our study, it is also stated in the literature that gender factor does not have an effect on academic achievement.[11,12]

Theoretical and clinical education systems are combined in dental education. While the first three years of the training consists of theoretical training, theoretical and clinical training is carried out together in the last two years. Discovery levels of 1st and 4th grade students were higher and it is thought that the 1st grade students’ discovery levels are high because of being new to university education, also for the 4th grade students new education system including clinical training may start to arouse curiosity. Hakan and Münire (2014) reported in their study that the first-year students had higher academic motivation than the last-year students.[7]

Academic success can be determined by a number of factors, and there is no significant difference between the students and non-working students in the literature.[13,14] However, students who had to work

early in the morning had lower academic achievement.[13]

Celikoz indicated that as the income levels of the candidate teachers decrease, there is an increase in the level of extrinsic motivation as a driving force.[15] In our study, while the perception of income-expenditure balance did not affect academic motivation, it was observed that the discovery levels of the students who stated that their income was more than their expenses were higher than those who stated that their income was less than their expenses. This situation suggested that the students who did not have a shortage of livelihoods might have a high desire to understand because they had more opportunities and could improve themselves.

When the compatibility of dentistry with the student's interest and the relationship between academic motivation and academic self-efficacy are examined, there was a significant difference between academic motivation, self-exceeding and use of knowledge, and the compatibility of dentistry to the student's interest. The difference between the self-exceeding was found to be due to those who thought it was congruent and who were indecisive, and the difference between the use of knowledge and academic motivation was found to be due to those who thought it was congruent and those who thought it was incongruent and indecisive. The level of self-exceeding of students who think that dentistry is congruent with their interest is higher than those of students who are indecisive, and the level of academic motivation and use of knowledge is higher than students who think that it is incongruent and indecisive. It is expected that the students who are eager in their field will have high motivation, use the information about their fields more and make more effort in this process.

There was no correlation between GPA and academic self-efficacy in our study, however Multon et al. indicated that the relationship between academic self-efficacy and performance varies according to students' achievement levels, and there are stronger relationships between students with low achievement than those with normative academic progress. He pointed out that the effect of academic self-efficacy could be particularly facilitating for low achieving students (low GPA), and pointed out the value of further development and evaluation of methods to promote their perception of academic self-efficacy.[16]

A negative correlation was found between the academic self-efficacy and academic motivation and its subgroups. Similar to our study, Ersanlı established a low-level negative correlation between language learning motivation and self-efficacy beliefs of students and anticipated this could be interpreted as the self-efficacy of the students decreases while their motivation to learn language increases. Students with high academic motivation are interested in the course and are willing to learn.[17] This situation increases the academic success of the student. In our study, it was found that GPA was positively correlated with academic motivation and self-exceeding, use of knowledge, discovery. It was seen that students with high academic motivation had higher GPA. Similarly, Amrai et al. stated that motivational factors have crucial role in academic achievement and since academic achievement of students is related to the society's development, it is suggested that more attention be paid to the components of motivation by educator.[18]

The results of the study suggest a negative correlation between academic motivation and self-efficacy beliefs of dental students. This might be explained with the outcome expectations influencing motivation and predicting behavior. However, self-efficacy beliefs and expected outcomes may not always be consistent.[19,20] Similarly, Ersanlı reported a negative correlation between academic motivation and self-efficacy and interpreted its implications might be that students with higher levels of self- efficacy may believe that they may perform well at school but, they do not perceive this success very rewarding and put much effort on it.[17]

CONCLUSION

According to the results of our study, it was found that dentistry students could overcome the difficulties they faced in the academic field if their academic motivation is high. Helping the students to be more successful both in educational and professional life

will be possible by increasing the academic motivation.

In this context, we believe that it is important for students to be supported by academic staff in the field of self-confidence and academic support and to participate in related projects.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***Design:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***Control/Supervision:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***Data Collection and/or Processing:*** *Betül Taş;* ***Analysis and/or Interpretation:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***Literature Review:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***Writing the Article:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***Critical Review:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***References and Fundings:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş;* ***Materials:*** *Betül Taş, Zeynep Güngörmüş, Metin Güngörmüş.*

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