Determination of Dental Anxiety Levels of Undergraduate Students Enrolled in the Faculty of Physical Therapy and Rehabilitation

Fizik Tedavi ve Rehabilitasyon Fakültesi Öğrencilerinin Dental Anksiyete Seviyelerinin Belirlenmesi

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ABSTRACT

INTRODUCTION: Dental anxiety is an intense emotional disturbance manifested by fear and misgiving of dental treatment. This study aims to evaluate state-trait and dental anxiety levels and related predisposing factors on undergraduate students enrolled in the Faculty of Physical Therapy and Rehabilitation.

MATERIAL and METHODS: Undergraduate students(n=170) enrolled in the Faculty of Physical Therapy and Rehabilitation, Dokuz Eylul University, Izmir participated in the present study. While questions regarding demographic properties, daily routine activities, and oral hygiene habits; Modified Dental Anxiety Scale (MDAS), and Spielberg's State-Trait Anxiety Inventory (STAI) were also covered in a single questionnaire. Students whose MDAS scores ≥19 were deemed in high anxiety level. Kruskal-Wallis and Mann-Whitney tests were applied in statistical analysis(p<0.05).

RESULTS: Scores of MDAS, and STAI did not show a significant difference between classes(p>0.05). However, MDAS, STAI-1, and STAI-2 scores of female students were greater compared to male students(p<0.01; p=0.005; p=0.003,respectively). Students had MDAS scores between 5-20 and high dental anxiety varied between 6.5% and 7.1%.

CONCLUSION: State-trait anxiety, and dental anxiety did not show any differences among classes of undergraduate students enrolled in the Faculty of Physical Therapy and Rehabilitation.

However, female students scored with greater state-trait and dental anxiety compared to male students.

Keywords: *The State-Trait Anxiety Inventory (STAI), dental anxiety, Physical Therapy and Rehabilitation, undergraduate students*

ÖZ

GİRİŞ: Dental anksiyete; diş tedavisine bağlı olarak duyulan korku ve kuruntular nedeniyle gelişen, tam olarak açıklanamayan yoğun bir huzursuzluk halidir. Bu çalışmanın amacı Fizik Tedavi ve Rehabilitasyon Fakültesi öğrencilerinin dental anksiyete ile durumluk ve süreklilik anksiyete seviyelerinin değerlendirilmesi ve dental anksiyetenin ilişkili olabileceği etkenleri değerlendirmektir.

YÖNTEM ve GEREÇLER: Çalışmamıza Dokuz Eylül Üniversitesi Fizik Tedavi ve Rehabilitasyon Fakültesi'nde eğitim gören (n=170) lisans öğrencileri dahil edildi. Katılımcılara demografik özellikler, yaşam alışkanlıkları ve oral hijyene ait soruları içeren anketle birlikte, Modifiye Dental Anksiyete Skalası (MDAS) ile Durumluk ve Süreklilik Aksiyete Envanteri [State-Trait Anxiety Inventory(STAI)] uygulandı. MDAS skorları ≥19 olanlar yüksek anksiyete seviyesi olarak değerlendirildi. Kruskal-Wallis, Mann-Whitney ve Ki-Kare testleri istatistiksel analizde kullanıldı (p<0.05).

BULGULAR: MDAS ve STAI skorları sınıflar arasında anlamlı bir farklılık göstermemiştir (Kruskal-Wallis Testi, p>0,05). Ancak kız öğrencilerin erkek öğrencilere göre MDAS, STAI-1 ve STAI-2 skorlarının istatistiksel olarak daha yüksek olduğu bulundu (sırasıyla, p<0,01; p=0,005; p=0,003). Öğrencilerin MDAS skorları 5-20 arasında değişmekte olup, yüksek dental anksiyete oranları % 6,5 ile %7,1 aralığındadır.

SONUÇ: Fizik Tedavi ve Rehabilitasyon Fakültesi lisans öğrencilerinin durumluk ve süreklilik anksiyete seviyesi ile dental anksiyete seviyesi sınıflar arasında değişiklik göstermemiştir. Ancak, kız öğrencilerin erkek öğrencilere kıyasla günlük hayatında daha kaygılı ve daha fazla dental kaygıya sahip olduğu görülmüştür.

Anahtar Kelimeler: *Dental anksiyete, Durumluk-Süreklilik Anksiyete Envanteri, fizik tedavi ve rehabilitasyon, öğrenci*

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INTRODUCTION

Dental anxiety is defined as anxiety or an uncomfortable emotional state that fearful situations will occur during dental treatment. It has been determined that dental anxiety is an essential factor in the failure to receive dental treatment.[1]

Researchers explain that people with dental anxiety tend to avoid dental treatments, which leads to a gradual decline in their oral health and creates a vicious cycle. Patients often feel embarrassed about their poor oral hygiene until they have to visit the dentist because of unbearable pain. Today, even with technological advances in dentistry, fear and anxiety about dental treatment still persist in societies around the world.[2,3]

It is known that traumatic dental experiences, personal characteristics, age, gender, education level, psychological factors, and environmental influences affect the dental anxiety levels of children, adolescents, and young adults.[4,5] Studies show that dental anxiety increases as socio-cultural and economic levels decrease.[6,7]

Many scales have been developed to evaluate dental anxiety. The Dental Anxiety Scale is among the most widely used scales in dentistry.[8] Humphris et al. modified the original Corah Dental Anxiety Scale (CDAS), making it simpler and the answering system more consistent. [9] The Modified Dental Anxiety Scale (MDAS) is more comprehensive and has high validity and reliability, and also it is brief, easy to administer, and highly sensitive to clinically relevant dental situations.[9] In a study by İlgüy et al. on 294 patients, the MDAS scale was found to be a reliable and valid measure for the Turkish population.[10] In a study conducted by Tunç et al. in 2005, the reliability and validity of the MDAS were evaluated, and it was concluded that the instrument was suitable for the Turkish population.[11]

The other most frequently used scale is the State and Trait Anxiety Scale. This scale is administered to determine how a person feels at a specific moment and under particular conditions (state anxiety), as well as to assess how the individual feels regardless of the current situation and conditions (trait anxiety). The State-Trait Anxiety Scale was developed by Speilberger et al. in 1970. It was translated into Turkish and adapted by Oner and Le Compte.[12] This scale is a reliable anxiety measurement test that is easy to apply and evaluate. It is recommended to maximize patient satisfaction and oral hygiene by providing the best balance between dental treatment and anxiety.[12]

There are many studies on dental anxiety in various age groups, professional groups, and students at higher education institutions, both internationally and within our country. [6,13-16] While dental anxiety is being investigated, especially in medical and dentistry students in our country,[17,18] there is only one study noted on dental anxiety among non-physician healthcare (NPH) professionals.[19]

Physical Therapy and Rehabilitation (PTR) is a profession within NPH focused on human health, and like physicians, they are in a profession that involves one-on-one consultations and face-to-face treatment with patients. This field uses evidence-based treatment strategies to help individuals regain independence and improve their quality of life after experiencing functional loss and physical disabilities from various causes. PTR education includes a four-year undergraduate program that combines clinical experiences with traditional academic coursework, similar to many other healthcare professions.

This study aims to evaluate the dental anxiety and state and trait anxiety levels of students of the Faculty of Physical Therapy and Rehabilitation and the factors that may be associated with dental anxiety. “There is no association between dental anxiety and family status, education years, gender, living, and oral hygiene habits among PTR students.” was established as the null hypothesis.

MATERIAL and METHOD

This study involved 1st, 2nd, and 3rd-year undergraduate students (n = 170) enrolled at Dokuz Eylul University's Faculty of Physical Therapy and Rehabilitation (PTR) during the 2021-2022 academic year. 4th-year students were excluded because they did not volunteer. Ethics committee approval for the research was obtained from the Dokuz Eylul University Faculty of Medicine Non-Interventional Research Ethics Committee (2022/05-06). Students were informed about the research topic, and informed consent was collected from those who agreed to participate.

With the lecturer's permission, information about the study was provided during the final 10 minutes of the lesson preceding the midday recess. Data collection was subsequently conducted face-to-face in the PTR Faculty student classrooms during this period under the supervision of two dentists in their classrooms (GB and PG). Students completed paper-based surveys under supervision, and the surveys were collected immediately afterward.

The survey form has two sections. In the first section, alongside demographic details, a survey containing questions about living habits and oral hygiene was used. In the second part, to assess the participants' dental anxiety levels, the Modified Dental Anxiety Scale (MDAS)[9] and the State-Trait Anxiety Inventory (STAI)[12] were administered.

MDAS has five scores, with responses to each question ranging from 'no anxiety' (1) to 'extremely high

anxiety' (5). Therefore, each question receives a score between 1 and 5; the total score can range from 5 to 25. A cut-off score of 19 points on the MDAS indicates high dental anxiety.[9]

The STAI comprises two scales: the State (STAI-1) and Trait (STAI-2) Anxiety Inventories, each consisting of 20 items. The total score ranges from 20 to 80, with 80 being the highest and 20 the lowest. A higher total anxiety score indicates a greater level of anxiety.

Statistical analyses were performed using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp., Armonk, NY, USA). The distribution of numerical variables was assessed for normality using the Kolmogorov-Smirnov test. Since the data did not follow a normal distribution, non-parametric methods were used for hypothesis testing. Group comparisons involved the χ^2 test, Kruskal-Wallis test, and Mann-Whitney U test. For post-hoc analysis after the Kruskal-Wallis test, pairwise comparisons were done with Dunn's test and Bonferroni correction. The existence of linear relationships between numerical variables was examined using Spearman's rank correlation analysis. All tests were applied at the 0.05 significance level.

RESULTS

The ages of the undergraduate students participating in our study ranged from 18 to 24, with 135 (79.4%) being women and 35 (20.6%) being men. 27.6% (n=47) of the students are in the first grade, 17.6% (n=30) are in the second grade, and 54.7% (n=93) are in the third grade.

Information about the living habits and oral hygiene status of the students is given in Table 1.

The mean ± SD (median; min-max) values for all students were 10.46 ± 4.08 (10; 5-25) for MDAS, 40.01 ± 5.78 (40; 27-62) for STAI-1, and 46.89 ± 5.88 (47; 34-67) for STAI-2. When assessing the 'extremely high anxiety' response in MDAS, the highest rates were found in MDAS 3 at 7.1% and in MDAS 5 at 6.5%. MDAS scores among students ranged from 5 to 25, with only two students scoring a 25.

Table 1: Distribution of the students according to the living habits and oral hygiene status

			n (%)
Smoking habit	none		110 (64.7)
	<1 pack a day		31 (18.2)
	>1 pack a day		4 (2.4)
	Smoked and quit		25 (.147)
Frequency of dental visit	Never		9 (5.3)
	When a problem occurs		133 (78.2)
	Regular		28 (16.5)
Treatments performed in a dental clinic	Filling	None	64 (37.6)
		Done	106 (62.4)
	Extraction	None	122 (71.8)
		Done	48 (28.3)
	Other	None	93 (54.7)
		Done	77 (45.3)
Frequency of tooth brushing	Once a day		3 (1.8)
	Twice a day		51 (30)
	1-2 a week		110 (64.7)
	Not brushing		6 (3.6)
Self-reported oral hygiene	Very bad (entirely poor)/Bad (poor)		11 (6.5)
	Moderate		95 (55.9)
	Good (healthy)		53 (31.2)
	Very good (Entirely healthy)		11 (6.5)
Self-reported oral health	Very bad (entirely poor)		3 (1.8)
	Bad (poor)		31 (18.2)
	Modetrate		83 (48.8)
	Good (healthy)		43 (25.3)
	Very good (Entirely healthy)		10 (5.9)

Table 2: Comparison of MDAS, STAI-1 and STAI-2 scores between education years and gender.

	MDAS Mean ±SD (median; min-max)	*p*	STAI-1 Mean ± SD (median; min-max)	*P*	STAI-2 Mean ± SD (median; min-max)	*p*
Education years						
1st year	10.23±4.473 (9; 5-25)	0.530	41.38±5.86 (41; 33-62)	0.093	47.11±6.45 (47; 34-67)	0.982
2nd year	10.53±2.98 (10; 6-17)		40.50±5.70 (40; 27-52)		47.43±5.73 (47; 40-63)	
3rd year	10.55±4.22 (10; 5-25)		39.16±5.68 (39; 28-57)		46.89±5.88 (47; 36-61)	
Gender						
Female	11.01±4.18 (10; 5-25)	0.001*	39.33±5.35 (39; 27-53)	0.005*	47.73±5.84 (47; 36-67)	0.003*
Male	8.31±2.84 (8; 5-15)		42.66±6.67 (42; 33-62)		44.43±5.85 (44; 34-60)	

*: $p<0.05$; statistically significant.

Regarding the relationship between MDAS, STAI-1, and STAI-2 scores and education year levels, no statistically significant difference was detected (Table 2). Similarly, the relationships between MDAS, STAI-1, and STAI-2 scores and families' income status are not statistically significant (p=0.111; p=0.135; p=0.730, respectively, Kruskal-Wallis Test). It was observed that female students had higher MDAS, STAI-1, and STAI-2 scores than male students and were found to be statistically significant (p<0.01; p=0.005; p=0.003, respectively, Mann-Whitney U Test). While the MDAS score of students whose parents were university graduates was found to be lower than that of students whose parents were secondary school graduates (p=0.003, χ2), no statistically significant difference was observed in the relationship between STAI-1 and STAI-2 scores and educational level.

MDAS and STAI-1 scores of the students regarding frequency of dental visits exhibited statistically significant differences (p<0.003; p<0.008, respectively, Kruskal-Wallis). MDAS anxiety levels were lower in students who regularly visited the dentist compared to those who never visited or only went when a problem arose (p=0.047; p=0.004, respectively, Dunn's test with Bonferroni corrections). STAI-1 scores were higher in students who regularly visited the dentist compared to those who only went when a problem arose (p=0.023, Dunn's test with Bonferroni corrections). MDAS scores of self-reported oral health showed a significant difference among the five subgroups (p=0.047); however, in the Dunn's test pairwise comparisons, no significant differences were detected between the two groups. No statistically significant difference was found in STAI-2 scores (p=0.999; Kruskal-Wallis). There was no statistically significant relationship between smoking status, tooth brushing frequency, students' self-reported oral hygiene, previous fillings, extractions, and other procedures performed at the dentist, and MDAS, STAI-1, and STAI-2 scores (Table 3).

Table 3: Evaluation of MDAS, STAI-1 ve STAI-2 scores according to living and oral hygiene habits.

		MDAS Mean ± SD (meadian; min-max)	*p*	STAI-1 Mean ± SD (meadian; min-max)	*P*	STAI-2 Mean ± SD (meadian; min-max)	*p*
Smoking habit	none	10.39± 3.715 (10.00; 5-23)	0.501	39.53± 5.674 (39; 27-53)	0.490	46.30± 5.517 (46; 34-60)	0.516
	<1 pack a day	10.23± 5.071 (9; 5-25)		40.32± 4.847 (41; 32-51)		48.55± 6.898 (47; 38-67)	
	>1 pack a day	10.50± 5.916 (8.5; 6-19)		42.25± 2.630 (41.50; 40-46)		48.75± 9.394 (47.00; 40-61)	
	Smoked and quit	11.81± 4.578 (11; 7-25)		41.44± 6.841 (42.00; 30-57)		48.75± 5.260 (47.00; 43-60)	
Frequency of tooth brushing	Once a day	9.33± 3.215 (9; 7-13)	0.348	40.33± 6.028 (41; 34-46)	0.322	47.33± 8.386 (43; 42-57)	0.674
	Twice a day	10.53± 3.992 (10; 5-20)		40.20± 6.490 (41; 28-62)		46.67± 6.118 (46; 34-61)	
	1-2 in a week	10.58± 4.209 (10; 5-25)		39.75± 5.449 (39; 27-53)		47.34± 6.017 (47; 36-67)	
	Not brushing	9.00± 2.944 (9.50; 5-12)		42.50± 7.326 (44.50; 32-49)		45.25± 3.775 (46; 40-49)	
Self-reported oral hygiene	Very bad (entirely poor) / Bad (poor)	10.36± 3.613 (10; 7-10)	0.087	39.73± 5.179 (40; 32-48)	0.141	44.64± 3.443 (46; 38-50)	0.19
	Moderate	11.14± 4.445 (11; 5-25)		39.07± 5.328 (39; 27-57)		46.53± 5.632 (46; 34-61)	
	Good (healthy)	9.47± 3.273 (9; 5-20)		41.57± 6.417 (41; 30-62)		48.30± 6.958 (47; 35-67)	
	Very good (Entirely healthy)	9.45± 4.108 (8; 6-20)		40.91± 5.941 (41; 32-49)		47.91± 5.088 (47; 41-60)	

Table 3: Evaluation of MDAS, STAI-1 ve STAI-2 scores according to living and oral hygiene habits.

		MDAS Mean ± SD (meadian; min-max)	*p*	STAI-1 Mean ± SD (meadian; min-max)	*P*	STAI-2 Mean ± SD (meadian; min-max)	*p*
Self-reported oral health	Very bad (entirely poor)	6.67± 1.528 (7; 5-8)	0.047*	38.67± 9.292 (43;28-45)	0.094	51.00± 4.359 (53; 46-54)	0.536
	Bad (poor)	11.48± 4.226 (10; 6-23)		39.26± 5.727 (39; 30-62)		45.90± 5.827 (46; 35-61)	
	Moderate	10.80± 4.441 (10; 5-25)		39.41± 5.533 (39; 27-57)		47.00± 6.380 (46; 34-63)	
	Good (healthy)	9.81± 3.326 (10; 5-20)		41.07± 6.300 (40; 30-53)		47.86± 5.755 (47; 38-67)	
	Very good (Entirely healthy)	8.40± 2.413 (8; 6-13)		43.20± 3.584 (43,50; 36-49)		46.30± 4.084 (47; 40-52)	
Frequency of dental visits	Never been	11.56± 3.972[a] (13; 5-17)	0.003*	43.67± 7.053 (41;34-57)	0.008*	47.33± 7.874 (47; 38-61)	0.999
	When a problem occurs	10.76± 4.047[b] (10,00; 5-25)		39.27± 5.493[c] (39; 27-62)		46.94± 5.542 (47; 34-61)	
	Regular	8.68± 3.945[a, b] (8; 5-25)		42.36± 5.851[c] (42; 31-53)		47.46± 7.456 (47; 34-67)	
Treatments performed in a dental clinic	corrected value						
Filling	None	10.69± 3.858 (10; 5-23)	0.303	40.08± 6.237 (40; 30-57)	1.000	46.75± 5.24 (47; 36-60)	0.941
	Done	10.20± 4.008 (10; 5-25)		39.93± 5.566 (39; 27-62)		47.01± 6.274 (46,50; 34-67)	
Extraction	None	10.20± 3.899 (10; 5-25)	0.375	39.70± 5.751 (39; 27-57)	0.198	46.57± 5.886 (46; 34-67)	0.113
	Done	10.87± 4.075 (10; 5-23)		40.80± 5.961 (41; 28-62)		48.09± 5.992 (47; 35-63)	
Other	None	10.92± 4.628 (10; 5-25)	0.365	39.35± 5.950 (38; 27-62)	0.051	46.95± 6.591 (46; 34-67)	0.712
	Done	9.95± 3.267 (10; 5-19)		40.81± 5.582 (41; 30-53)		46.99± 5.020 (47; 39-63)	

*: $p<0.05$;Statistically significant; Kruskal-Wallis.
A significant difference was observed between groups with the same letters (Dunn's Test with Bonferroni correction; the significance level is .05. Significance values have been adjusted by the Bonferroni correction for multiple tests); a: Never been vs Regular, $p=0.047$; b: When a problem occurs vs Regular, $p=0.004$; c: When a problem occurs vs Regular, $p=0.023$.

Table 4: Evaluation of MDAS anxiety scores according to gender, education years, parental education and family income levels

		MDAS= 0-18 n (%)	MDAS≥ 19 n (%)	*p*
Student	n (%)			
Gender	Female:135(79.4)	124 (91.9)	11 (8.1)	0.123
	Male: 35 (20.6)	35 (100)	0	
Education years	1st Year: 47 (27.6)	43 (91.5)	4 (8.5)	0.277
	2nd Year: 30(17.6)	30 (100)	0	
	3rd Year: 93 (54.7)	86 (92.5)	7 (7.5)	
Family information				
Family income	Low: 67 (39.4)	62 (92.5)	5 (7.5)	0.544
	Medium: 64 (37.6)	59 (92.2)	5 (7.8)	
	High: 39 (22,4)	37 (97.4)	1 (2.6)	
Education Level				
	Literate/illiterate: 18 (10.6)	16 (89)	2 (11)	0.300
	8-year secondary: 45 (26.5)	40 (89)	5 (11)	
	High school: 70 (41.2)	67 (95.7)	3 (4.3)	
	University: 37 (21.8)	36 (97.3)	1 (6.5)	

*: $p<0.05$; $\chi 2$ Test.

Statistically significant correlations were observed between the variables: a negative correlation between MDAS and STAI-1 (r =-0.211, p = 0.006), a positive correlation between MDAS and STAI-2 (r = 0.157, p = 0.040), and a positive correlation between STAI-1 and STAI-2 (r = 0.214, p = 0.005). Although all correlations were statistically significant, their effect sizes ranged from small to medium (r = 0.10–0.30).

Participants with an MDAS score of ≥19 were considered to have a high level of dental anxiety. In the study, 11 students (0.6%) had an MDAS score of ≥19, while 159 students (94%) scored <19. No statistically significant differences were found when evaluating gender and grade groups with MDAS anxiety levels (p=0.123; p=0.277, respectively, $\chi 2$ Test) (Table 4). Likewise, a comparison of family income and education levels with anxiety levels revealed no statistically significant differences (p=0.544; p=0.300, respectively, $\chi 2$ Test).

DISCUSSION

Dental anxiety is a significant problem that is widely seen in society and causes patients to avoid dental treatment. Although it has been shown that many factors, including psychological and environmental factors, play a role in the formation of dental anxiety,[4,20] it has been reported that the field of education received may also affect dental anxiety.[14,19,21] Within the scope of this information, our study aimed to evaluate the dental anxiety and state and trait anxiety levels of students of the Faculty of PTR as NPH professionals.

Both physicians and non-physician healthcare professionals may experience health-related fears, with dental phobia representing one of these conditions. As students advance through health science degrees, their education and clinical experiences may have an impact on their oral health habits. Pre-graduation research on these behaviors provides valuable insights. The prevalence of dental anxiety among university students in various fields in the literature has been reported to vary between 4% and 20%.[21,22] In our study, the rate of students with excessively high MDAS scores ranged from 6.5% to 7.1% across the academic years, and the overall mean MDAS score was 10.46 ± 4.08. These rates are slightly lower than those reported by Keçeci et al. in their investigation of NPH professional faculty students, where the mean MDAS score was 13.23 ± 4.63, and 12 out of 80 students were classified as highly anxious.[19]

Studies have shown that women exhibit higher scores on the MDAS, STAI-1, and STAI-2 compared to men.[18,21-23] Parallel to these findings of the aforementioned researchers, our study also revealed that female students demonstrated higher levels of dental anxiety than male students. One possible explanation is that males are generally viewed as more emotionally stable than females.[14,21] However, other studies have reported no significant difference in dental anxiety between genders.[24,25] These discrepancies may stem from cultural variations and differences in study populations.

Individuals' attendance at regular dental check-ups affects their dental anxiety levels.[26] Our study found that MDAS scores were lower in students who attended regular dental check-ups, while state anxiety scores were lower in students who visited the dentist when a problem occured. These seemingly conflicting results may reflect two different dynamics: regular check-ups may increase awareness and provide them with a greater sense of security, whereas the urgency of pain or discomfort may temporarily overcome dental fear in those seeking immediate relief. Additionally, our study found no statistically significant relationship between the anxiety levels of students and their opinions about their smoking status, frequency of tooth brushing, previous dental treatments, or their oral hygiene. Erten et al. in their study investigating the frequency and reasons for visiting the dentist using the Dental Fear Scale found higher anxiety in patients who had never visited a dentist before.[6] Similar to this finding, higher dental anxiety was observed in students and adults who visited the dentist irregularly compared to those who visited the dentist regularly. [18,27]

Numerous studies in the literature have evaluated the dental anxiety levels among dental students throughout their educational journey. These studies commonly report that first-year students tend to experience higher anxiety levels compared to senior students.[13,16,23] For instance, in a cohort study by Samur Ergüven et al., it was found that first-year dental students had significantly higher anxiety levels than fifth-year students.[17] Similarly, Mutluay and Mutluay reported that preclinical dental hygiene students enrolled in dental hygiene training had higher CDAS scores than their clinical counterparts.[15] However, in our study, no statistically significant difference was observed in the anxiety levels across different years of education. This inconsistency may be due to differences in educational background. Our participants had not received any oral and dental health education during their undergraduate years. In contrast, the studies mentioned above found that students actively received dental education, which may help to reduce anxiety through increased knowledge, clinical exposure, and hands-on experience as they advance in their training. Additionally, studies comparing dental anxiety among students of dentistry and other faculties have found that dentistry students are less anxious.[14,19,21] However, Sümer et al. evaluated dental anxiety levels using the CDAS among dental students and students from other faculties and found no significant difference between the groups.[18]

The limitation of this study is that it was restricted to a single faculty offering NPH education. Broadening the research to include multiple NPH faculties and healthcare vocational schools would better support our main hypothesis.

The primary purpose of our research is to determine the dental anxiety levels of students at the Faculty of PTR and to evaluate the factors that may be related to anxiety. As a result of the survey, significant differences were found in gender, family education level, self-reported oral health status, and frequency of dental visits. "There is no dental anxiety exists in PTR students as non-physician healthcare professionals regarding gender, family information, living, and oral hygiene habits, separately." The null hypotheses were rejected. "There is no dental anxiety exists in PTR students as non-physician healthcare professionals regarding the education years." The null hypothesis was accepted.

CONCLUSION

Within the findings of our study, it was concluded that women have higher anxiety levels. Regular dental visits and a higher family education level help to reduce anxiety levels among PTR students as NPH professionals.

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