



An Investigation of Prevalence, Awareness, and Oral Findings of Bruxism in Students at the Faculty of Dentistry

Abdurrahman Ögünç¹ , Hamit Tunç²

¹Department of Prosthetic Dentistry, Burdur Mehmet Akif Ersoy University Faculty of Dentistry, Burdur, Türkiye

²Department of Pediatric Dentistry, Burdur Mehmet Akif Ersoy University Faculty of Dentistry, Burdur, Türkiye

Cite this article as: Ögünç A, Tunç H. An investigation of prevalence, awareness, and oral findings of bruxism in students at the faculty of dentistry. *Essent Dent.* 2025, 4, 0028, doi:10.5152/EssentDent.2025.25028.

Abstract

Background: The present study investigated the prevalence, awareness, and oral findings of bruxism in dental students and the relationship between social factors and perceived stress.

Methods: A total of 118 students (74 females, 44 males) aged between 18 and 29 years studying at the Faculty of Dentistry, Burdur Mehmet Akif Ersoy University, were included in this study. The students were asked to complete a questionnaire composed of demographic and bruxism-related items. The Basic Erosive Wear Examination (BEWE) index was used to determine the extent of wear of the teeth, and the Perceived Stress Scale was used to understand the stress levels of the students.

Results: The rate of bruxism awareness and actual occurrence of bruxism was 27.12% and 31.3%, respectively. There was a statistically significant correlation between the BEWE scores and the father's education level, family structure, teeth clenching habit, and pain in the joint area and face ($P < .05$). Furthermore, there was a statistically significant difference between perceived stress and family income, family disciplinary status, noise from the jaw joint, pain in the teeth, joints, and facial area, and teeth clenching habit, and these complaints affected the quality of life ($P < .05$).

Conclusion: Bruxism was found to be prevalent among the dental students who participated in this study. It should be taken into consideration that the presence of bruxism may be associated with elevated stress levels and higher BEWE scores.

Keywords: Bruxism, dental students, sociodemographic factors, tooth wear

INTRODUCTION

In the consensus report published by Lobbezoo et al¹ in 2018, bruxism was classified into 2 categories: sleep bruxism and awake bruxism. Sleep bruxism is a masticatory muscle activity characterized as rhythmic (phasic) or non-rhythmic (tonic) during sleep and is not considered a movement disorder or sleep disorder in healthy individuals. Awake bruxism is chewing muscle activity during wakefulness characterized by repetitive or continuous tooth contact and is not considered a movement disorder in healthy individuals.¹ Bruxism was recognized as a common parafunctional activity all over the world. Previous studies have shown a global prevalence rate of 22.22% for bruxism in awake

What is already known on this topic?

- *Bruxism is a multifactorial condition influenced by psychological, behavioral, and environmental factors*
- *Dental students experience high levels of academic stress, which can increase the likelihood of bruxism*
- *Tooth wear, clenching habits, and orofacial pain are well-documented findings associated with bruxism*

What this study adds on this topic?

- *Demonstrates a significant positive relationship between perceived stress and bruxism among dental students, emphasizing its multifactorial nature*
- *Identifies strong correlations between self-reported bruxism behaviors and symptoms such as tooth, joint, and facial pain, as well as clenching and joint noise*
- *Reveals that family structure may influence tooth wear severity, with higher BEWE scores observed in students with divorced or deceased parents*

Corresponding author: Abdurrahman Ögünç
e-mail: drabdurrahman07@hotmail.com



Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Received: February 19, 2025
Revision Requested: April 25, 2025
Last Revision Received: June 24, 2025
Accepted: August 11, 2025
Publication Date: December 2, 2025

and sleep states. Specifically, the sleep bruxism prevalence was shown to be 21%, with awake bruxism recorded at 23%.²

Bruxism is a very prevalent parafunction in the general population. Previous studies suggested that dental, systemic, and psychological factors were effective in the etiology of bruxism. Nevertheless, the effect of these factors has not been fully understood.^{3,4} Today, it is considered that bruxism develops due to stress and anxiety.⁵ Stress is a stimulus and reaction involving physiological and psychological components that can affect normal functioning.⁶ Dental education is also perceived as a stressful period involving clinical and practical training.⁷⁻¹⁰ Previous studies have investigated the effect of stress during dental education. A systematic review conducted in 2011 reported that the primary sources of stress among dental students were examinations, clinical requirements, and the attitudes of dentistry faculty members.¹¹ The Perceived Stress Scale (PSS) is considered a valid and reliable instrument to measure people's subjective perceptions of stress in a healthy population.^{12,13} There are 3 forms of the PSS consisting of 14, 10, and 4-item questionnaires. Each item in the test is scored 4 points; the scores vary between 0 and 56 in the 14-item form, 0 and 40 in the 10-item form, and 0 and 16 in the 4-item form, and high scores indicate higher levels of stress perception in the related individual.¹³

Bruxism causes tooth wear, tooth fracture, hypertrophy of the masticatory muscles, alveolar bone loss, pain, and noise in the joint area, all of which are considered to induce a general state of fatigue and irritability with an adverse effect on the quality of life of affected individuals.¹⁴⁻¹⁶ The easy-to-apply and worldwide-accepted Basic Erosive Wear Examination (BEWE), introduced at a conference held in Basel in 2007, can be used to detect tooth wear, a manifestation of bruxism.¹⁷

Bruxism is an important topic in dentistry, and further research is needed. Previous studies investigated bruxism in children and the elderly, but there is only a limited number of studies that investigated the prevalence, awareness, and oral findings of bruxism in young individuals studying dentistry. This study aimed specifically at young adult dental students, as they are a higher-risk population for bruxism due to the intense academic and psychological stress endured during dental schooling.¹¹ Additionally, due to their oral health knowledge and awareness, they are also a relevant group to determine both the prevalence and knowledge of bruxism. Accordingly, the present study investigated bruxism awareness and prevalence in young dental students: i) the relationship between bruxism and perceived stress and ii) the BEWE index.

MATERIALS AND METHODS

This study aimed to investigate bruxism awareness, prevalence, and oral findings in 118 young adult students at the Faculty of Dentistry, Burdur Mehmet Akif Ersoy University.

The study was initiated after obtaining ethical approval from the Burdur Mehmet Akif Ersoy University Non-Interventional Clinical Research Ethics Committee (Approval No: GO 2023/283; Date: May 3, 2023,), and written informed consent was obtained from each participant according to the World Medical Association Declaration of Helsinki. Participants were asked to complete a questionnaire about sex, systemic status, parental education, and income levels. In addition, the wear level of the teeth was evaluated using the BEWE index. All teeth are divided into 6 regions in the BEWE index. The upper jaw is divided into 3 regions: 14-17, 13-23, and 24-27, whereas the lower jaw is divided into 3 regions: 34-37, 33-43, and 44-47. The scores for the most affected surfaces (buccal/facial, occlusal, and lingual/palatal) are recorded for each region. The severity level of tooth wear is given in Table 1. The scores from each region are summed to produce a score ranging from 0 to 18. Bartlett et al¹⁷ interpreted the scores as follows: A total score of ≤ 2 is classified as no erosive tooth wear ("None"), a total score between 3 and 8 is classified as low erosive tooth wear, a total score between 9 and 13 is classified as moderate erosive tooth wear, and a total score of ≥ 14 is classified as high erosive tooth wear.

In the present study, BEWE scores were calculated for each participant as recommended by Bartlett et al¹⁷ Participants were also asked to complete the PSS (Table 2) to assess the stress status of the participants. The PSS consists of 10 items and 5 alternative responses for each item. Responses to the items include never (0 points), almost never (1 point), sometimes (2 points), fairly often (3 points), and very often (4 points), and are scored between 0 and 4 points. The total score obtained from the scale ranges between 0 and 40 points. Higher scores indicate higher perceived stress levels.^{12,18,19} Furthermore, participants who responded yes to at least 3 items about the etiology of bruxism in the questionnaire were considered aware of bruxism.

The Statistical Package for the Social Sciences software (SPSS Inc., Chicago, IL, USA) was used for the statistical analyses of the study data. Compliance with normal distribution was examined with Kolmogorov-Smirnov and Shapiro-Wilk tests. Categorical variables were examined with the Pearson chi-square test and multiple comparisons were made with Bonferroni correction. The Mann-Whitney *U* test was used to compare data that did not show normal distribution according to 2 groups, and independent 2 sample *t* test

Table 1. Erosive Wear Rating Criteria (Basic Erosive Wear Examination Index)

Score
0 No erosive tooth wear
1 Initial loss of surface texture
2* Hard tissue loss <50% of the surface area
3* Distinct defect and hard tissue loss $\geq 50\%$ of the surface area
*Frequent dentin involvement in scores 2 and 3.

Table 2. Perceived Stress Scale

	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. In the last month, how often have you been upset because of something that happened unexpectedly?					
2. In the last month, how often have you felt that you could not control the important things in your life?					
3. In the last month, how often have you felt nervous and stressed?					
4. In the last month, how often have you felt confident about your ability to handle your personal problems?					
5. In the last month, how often have you felt that things were going your way?					
6. In the last month, how often have you found that you could not cope with all the things that you had to do?					
7. In the last month, how often have you been able to control irritations in your life?					
8. In the last month, how often have you felt that you were on top of things?					
9. In the last month, how often have you been angered because of things that happened outside of your control?					
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					

was used to compare data that showed normal distribution. One-way analysis of variance was used to compare data that showed normal distribution according to 3 or more groups. Spearman's rho correlation coefficient was used to examine the relationship between variables and scores that did not show normal distribution. Analysis results were presented as frequency (percentage) for categorical variables and as mean \pm SD and median (minimum–maximum) for quantitative data. The significance level was taken as $P < .050$.

RESULTS

The distribution of demographic data of the participants is given in Table 3. The comparison of BEWE scores by demographic data is given in Table 4. The comparison of total PSS scores by demographic data is given in Table 5. The relationship between age, BEWE scores, and total PSS score is given in Table 6.

The comparison of BEWE scores by demographic data is given in Table 4. The BEWE score depended upon the responses given to the item on the father's level of education ($P = .009$). The rate of those with a low BEWE score in primary school, high school, and university graduates was 14.8%, 18.4%, and 44.2%, respectively. The BEWE score depended upon the family structure ($P = .049$). The rate of those with no BEWE score among participants with parents living together, parents divorced, and 1 or both parents deceased was 71.2%, 20%, and 66.7%, respectively. The rate of those with low BEWE scores in participants with parents living together, parents divorced, and 1 or both parents deceased was 26.9%, 80%, and 22.2%, respectively. The BEWE score depended upon pain in the joint area and face when waking up in the

morning ($P = .001$). The proportion of participants with no BEWE score with and without joint and facial pain when waking up in the morning was 50% and 72.9%, respectively. The proportion of those with moderate BEWE scores in participants with and without joint and facial pain when waking up in the morning was 13.6% and 0%, respectively. The BEWE score was dependent upon the presence of a clenching habit ($P < .001$). The rate of those with no BEWE score among those with and without clenching habits was 45.9% and 79%, respectively. The rate of those with low BEWE scores among those with and without clenching habits was 45.9% and 21%, respectively. The rate of those with moderate BEWE scores among those with and without clenching habits was 8.1% and 0%, respectively.

The comparison of total PSS scores by demographic data is given in Table 5. There is a statistical difference in total PSS scores by sex ($P = .001$). The average total PSS score for males and females was 19.45 and 22.82, respectively. There was a statistical difference in the total PSS score in the responses to the "Do you consider your monthly income sufficient?" item ($P = .016$). The average rate of those who considered their monthly income sufficient and insufficient was 20.53 and 22.98, respectively. There is a statistical difference in total PSS scores by the discipline status in the family ($P = .022$). The median value of those with normal discipline and authoritarian discipline in the family was 21 and 26, respectively. There was a statistical difference in the total PSS score in the responses to the "Do you feel pain in your teeth?" item ($P = .005$). The mean value of those who did not feel pain in their teeth was 21.09, while the median value of those who felt pain was 25.75. There was a statistical difference in the total PSS score in the responses to the "When you wake up in

Table 3. An Analysis of Demographic Data

	Mean \pm SD	Median (Min-Max)
	20.07 \pm 1.41	20 (18-29)
Age	Frequency	Percentage
What is your sex?		
Male	44	37.3
Female	74	62.7
What is your mother's level of education?		
No education	2	1.7
Primary school	46	39.0
High school	33	28.0
University	37	31.4
What is your father's level of education?		
No education	1	0.8
Primary school	27	22.9
High school	38	32.2
University	52	44.1
Do you take any medication regularly?		
There is	11	0.8
None	107	90.7
How often do you visit a dentist?		
When I have a complaint	67	56.8
Twice a year	20	16.9
Once a year	31	26.3
Do you consider your monthly income sufficient?		
No	50	42.4
Yes	68	57.6
Discipline in the family		
Normal	102	86.4
Authoritarian	14	11.9
Indifferent	2	1.7
Family structure		
Parents live together	104	88.1
Parents divorced	5	4.2
1 or both parents dead	9	7.6
Do you regularly engage in sports activities?		
No	74	62.7
Yes	44	37.3
Do you feel pain in your teeth?		
No	106	89.8
Yes	12	10.2
Do you have joint and face pain when you wake up in the morning?		
No	96	81.4
Yes	22	18.6
Does your jaw joint make noise when you open and close your mouth?		
No	81	68.6
Yes	37	31.4
Do you think you have a habit of grinding your teeth?		
No	104	88.1
Yes	14	11.9
Do you think you have a habit of clenching your teeth?		
No	81	68.6
Yes	37	31.4
Do you think that these complaints affect your quality of life?		
No	77	65.3
Yes	41	34.7

Table 4. A Comparison of Basic Erosive Wear Examination Scores by Demographic Data

	BEWE Score			Test Statistic	P*
	None	Low	Middle		
What is your sex?				0.545	.762
Male	32 (72.7)	11 (25)	1 (2.3)		
Female	49 (66.2)	23 (31.1)	2 (2.7)		
What is your mother's level of education?				2.587	.629
Primary school	33 (71.7)	11 (23.9)	2 (4.3)		
High school	22 (66.7)	10 (30.3)	1 (3)		
University	24 (64.9)	13 (35.1)	0 (0)		
What is your father's level of education?				13.467	.009
Primary school	21 (77.8)	4 (14.8)a	2 (7.4)		
High school	30 (78.9)	7 (18.4)a	1 (2.6)		
University	29 (55.8)	23 (44.2)b	0 (0)		
How often do you visit a dentist?				1.424	.840
When I have a complaint	44 (65.7)	21 (31.3)	2 (3)		
Twice a year	14 (70)	6 (30)	0 (0)		
Once a year	23 (74.2)	7 (22.6)	1 (3.2)		
Do you consider your monthly income sufficient?				2.486	.289
No	37 (74)	11 (22)	2 (4)		
Yes	44 (64.7)	23 (33.8)	1 (1.5)		
Discipline in the family				1.315	.518
Normal	70 (68.6)	30 (29.4)	2 (2)		
Authoritarian	9 (64.3)	4 (28.6)	1 (7.1)		
Family structure				9.519	.049
Parents live together	74 (71.2)a	28 (26.9)a	2 (1.9)		
Parents divorced	1 (20)b	4 (80)b	0 (0)		
1 or both parents dead	6 (66.7)ab	2 (22.2)ab	1 (11.1)		
Do you regularly engage in sports activities?				1.830	.400
No	50 (67.6)	21 (28.4)	3 (4.1)		
Yes	31 (70.5)	13 (29.5)	0 (0)		
Do you feel pain in your teeth?				3.204	.201
No	75 (70.8)	29 (27.4)	2 (1.9)		
Yes	6 (50)	5 (41.7)	1 (8.3)		
Do you have pain in the joints and face when you wake up in the morning?				14.995	.001
No	70 (72.9)a	26 (27.1)	0 (0)a		
Yes	11 (50)b	8 (36.4)	3 (13.6)b		
Does your jaw joint make noise when you open and close your mouth?				2.191	.334
No	59 (72.8)	20 (24.7)	2 (2.5)		
Yes	22 (59.5)	14 (37.8)	1 (2.7)		
Do you think you have a habit of grinding your teeth?				3.214	.200
No	74 (71.2)	28 (26.9)	2 (1.9)		
Yes	7 (50)	6 (42.9)	1 (7.1)		
Do you think you have a habit of clenching your teeth?				16.104	<.001
No	64 (79)a	17 (21)a	0 (0)a		
Yes	17 (45.9)b	17 (45.9)b	3 (8.1)b		
Do you think that these complaints affect your quality of life?				3.600	.165
No	57 (74)	19 (24.7)	1 (1.3)		
Yes	24 (58.5)	15 (36.6)	2 (4.9)		

BEWE, Basic Erosive Wear Examination.

*Pearson chi-squared test.

a-b: There was no intergroup difference with the same letter in each row.

Table 5. A Comparison of Total Perceived Stress Scale Scores by Demographic Data

	Total PSS Score		Test Statistic	P
	Mean \pm SD	Median (Min-Max)		
What is your sex?			-3.345	.001*
Male	19.45 \pm 5.48	18.5 (9-31)		
Female	22.82 \pm 5.18	22.5 (11-35)		
What is your mother's level of education?			1.003	.372***
Primary school	22.11 \pm 5.31	22 (11-34)		
High school	20.61 \pm 4.21	20 (11-28)		
University	21.59 \pm 6.5	22 (9-35)		
What is your father's level of education?			0.619	.540***
Primary school	22.26 \pm 4.74	22 (13-34)		
High school	21.71 \pm 5.44	21.5 (9-31)		
University	20.88 \pm 5.8	20 (11-35)		
How often do you visit a dentist?			2.247	.115***
When I have a complaint	21.66 \pm 6.03	22 (9-35)		
Twice a year	19.95 \pm 3.5	19 (14-28)		
Once a year	22.42 \pm 5.34	22 (14-34)		
Do you consider your monthly income sufficient?			2.434	.016*
No	22.98 \pm 5.52	23 (9-35)		
Yes	20.53 \pm 5.32	20 (11-34)		
Discipline in the family			444.000	.022**
Normal	21.13 \pm 5.38	21 (9-35)		
Authoritarian	24.14 \pm 6.05	26 (11-31)		
Family structure			0.279	.757***
Parents live together	21.7 \pm 5.56	21.5 (9-35)		
Parents divorced	21 \pm 6.16	19 (14-30)		
1 or both parents dead	20.33 \pm 5.1	19 (13-28)		
Do you regularly engage in sports activities?			1.350	.180*
No	22.09 \pm 5.49	22 (9-35)		
Yes	20.68 \pm 5.51	19.5 (11-33)		
Do you feel pain in your teeth?			-2.854	.005*
No	21.09 \pm 5.31	21 (9-35)		
Yes	25.75 \pm 5.8	26 (15-34)		
Do you have pain in the joints and face when you wake up in the morning?			419.000	<.001**
No	20.51 \pm 5.17	20 (9-35)		
Yes	26.18 \pm 4.59	27 (17-34)		
Does your jaw joint make noise when you open and close your mouth?			-2.307	.023*
No	20.79 \pm 5.1	21 (9-34)		
Yes	23.27 \pm 6.07	24 (11-35)		
Do you think you have a habit of grinding your teeth?			-0.931	.354*
No	21.39 \pm 5.33	21 (9-35)		
Yes	22.86 \pm 6.86	24 (12-34)		
Do you think you have a habit of clenching your teeth?			-2.422	.017*
No	20.75 \pm 5.5	20 (9-35)		
Yes	23.35 \pm 5.2	24 (11-34)		
Do you think that these complaints affect your quality of life?			-3.232	.002*
No	20.42 \pm 4.99	20 (9-34)		
Yes	23.73 \pm 5.86	25 (11-35)		

PSS, Perceived Stress Scale.

*Independent 2 sample t-test.

**Mann-Whitney U test.

***One-way analysis of variance.

Table 6. A Review of the Relationship Between Age, Basic Erosive Wear Examination Score, and Total Perceived Stress Scale Scores

		BEWE Score	Age
Age	<i>r</i>	0.034	
	<i>P</i>	.718	
Total PSS Score	<i>r</i>	0.058	.104
	<i>P</i>	.536	.263

BEWE, Basic Erosive Wear Examination; PSS, Perceived Stress Scale.
r: Spearman's rank correlation coefficient (Spearman's ρ).

the morning, do you have pain in your joints and face?" item ($P < .001$). The median value of those with and without pain in the joint area and face when they woke up in the morning was 20 and 27, respectively. There was a statistical difference in the total PSS score by the responses to the "Does your jaw joint make a sound when you open and close your mouth?" item ($P = .023$). The mean value of those with and without jaw joint noise while opening and closing the mouth was 23.27 and 20.79, respectively. There was a statistical difference in the total PSS score in the responses to the "Do you think you have the habit of clenching your teeth?" item ($P = .017$). The mean value of those with and without the habit of clenching their teeth was 23.35 and 20.75, respectively. There was a statistical difference in the total PSS score in the responses to the "Do you think that these complaints affect your quality of life?" item ($P = .002$). The mean value of those who thought and did not think that their complaints had no effect on their quality of life was 23.73 and 20.42, respectively.

DISCUSSION

The present study investigated the prevalence and awareness of bruxism, oral manifestations of bruxism, and the relationship between bruxism and sociodemographic factors in young dental students. According to the global consensus proposed by Lobbezoo et al,¹ bruxism is classified into sleep bruxism and awake bruxism, which are distinct with regard to etiology, clinical presentation, and their potential impact on oral health. Sleep bruxism has a tendency to be a sleep-related movement disorder with neurophysiological etiology, whereas awake bruxism is more explicitly associated with psychosocial and behavioral aspects. Nonetheless, it should be noted that in the present study, the outcome is based on self-reported data and should be interpreted within the bounds of possible bruxism.

The prevalence of bruxism has been investigated not only in dentistry but also in various fields of research. Previous studies used various epidemiologic methods and diagnostic criteria and reported a wide range for the prevalence of bruxism from 8% to 31.4%.²⁰ In the present study, 31.3% of 118 students had superficial or significant tooth wear, which may be observed in individuals with bruxism. However, tooth wear can occur independently of bruxism and should not be interpreted as diagnostic on its own.

Reports on bruxism awareness varied because previous studies were conducted over a wide age range, in different populations, and using different methods. Although previous studies reported bruxism awareness between 15% and 23%, this rate widely varied between 5% and 96% according to the results of clinical studies.²¹ Şener et al²² reported bruxism awareness as 33.9% in their study, which investigated bruxism awareness and related factors in young adult individuals. Nekora-Azak et al²³ reported that in their study of 795 people who reached the hospital via telephone, the rate of bruxism awareness was 45.7%. Çebi et al⁵ reported bruxism awareness at 24.2% in their study of young individuals aged between 18 and 29 years. In the present study, 27.12% of the participants reported being aware of possible bruxism-related behaviors such as teeth clenching or grinding, which is in line with the range reported in previous self-report-based studies.

Maharani et al²⁴ reported in their study, which investigated tooth wear in 12-year-old children using the BEWE index, that the likelihood of erosive tooth wear was higher in children with low parental education levels. Similarly, Duangthip et al²⁵ reported higher BEWE scores in children with lower maternal education levels in their study on erosive tooth wear in preschool children in Hong Kong. Parents' level of education may influence daily life decisions regarding their children's intake of acid-containing diets. Therefore, a lower level of education may be associated with a higher incidence of erosive tooth wear in children.²⁶ Previous studies reported no statistically significant difference between the tooth wear indices determined based on the BEWE index^{5,27} and parental education levels. In the present study, higher BEWE scores were seen in participants with fathers holding a university degree. This difference could be associated with the present study, which includes university students. As a matter of fact, university students usually leave their family residences and live separately in another province, and their eating habits shift more toward ready-to-eat and acidic foods. Tooth erosion is caused by chemical action,²⁸ and it is considered that acidic dietary habits may increase the likelihood of tooth wear.

Çebi et al⁵ reported no statistically significant difference between BEWE score and family structure in their study investigating the occurrence of bruxism in oral and dental health students. In the present study, the BEWE scores were higher in participants with divorced parents. This may be attributed to the fact that students with divorced parents can have higher stress levels and, therefore, more tooth wear.

Abrasion and fractures on the occlusal surfaces of the teeth, hypertrophy, asymmetries, pain in the masticatory muscles, headache, and temporomandibular joint disorders can be seen upon clinical examination of bruxism.²⁹ In the present study, there was a statistically significant difference between tooth wear, joint and facial pain, and clenching habit.

Furthermore, female participants had higher PSS scores. Similarly, previous studies on stress levels among university students reported that gender differences were important and that female participants had higher stress levels.^{19,30} This can be attributed to multiple factors, including different ways of coping with stress, the importance attached to health, sex hormones, and social conditions.

In the present study, the perceived stress levels of students who did not find their monthly income sufficient and stated that their family structure was authoritarian were higher. Consistently, previous studies on university students reported high stress levels in participants with low income.³¹ Both the income status and the authoritarian structure of the family can have an effect on the social life of students, and this was reflected in the stress scores in the present study.

Therefore, there was a positive correlation between PSS scores in university students and bruxism factors, including pain in the teeth, pain in the joint area and face when they wake up in the morning, noise from the jaw joint, the habit of clenching their teeth, and the conviction that the foregoing had an adverse effect on their quality of life. In a study that investigated the relationship between perceived stress levels during the exam period and bruxism in dental students, Güven et al¹⁹ reported a positive correlation between PSS scores and bruxism, consistent with the present study. Similarly, previous studies³² reported that there was a strong relationship between bruxism and stress in students.

There are some limitations of this study that should be stated. Sampling was limited to the dental students of a single institution, which restricts the generalizability of the findings. Self-reported bruxism and stress data can be influenced by subjective bias. In addition, tooth wear was evaluated by clinical inspection only, without taking into account other potential contributing factors such as diet or gastrointestinal illness.

CONCLUSION

In light of the study data, the following conclusions were reached:

- Bruxism in dental students may be related to perceived stress. While a positive relationship between bruxism activities and the stress level was found, it should be considered in a multifactorial context, including behavioral, psychological, and environmental aspects.
- Female participants had higher PSS scores compared to males.
- There was a significant positive correlation between self-reported bruxism behavior and symptoms such as pain in the teeth, pain in the joint area and face when they wake up in the morning, clenching, and joint noises. Associations were made on the basis of self-reported

data and clinical observation of tooth wear according to the BEWE index.

- A statistically significant difference was found in tooth wear scores in relation to family structure. Students with divorced or deceased parents had higher BEWE scores compared to those with parents living together. This result is, however, exploratory and may be influenced by a number of underlying factors. Further longitudinal studies are therefore needed to investigate this correlation further.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of the University of Burdur Mehmet Akif Ersoy (Approval No.: GO 2023&283; Date: May 03, 2023).

Informed Consent: Written informed consent was obtained from students who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – A.Ö.; Design – A.Ö., H.T.; Supervision – A.Ö.; Resources – A.Ö., H.T.; Materials – A.Ö., H.T.; Data Collection and/or Processing – A.Ö., H.T.; Analysis and/or Interpretation – A.Ö., H.T.; Literature Search – A.Ö., H.T.; Writing Manuscript – A.Ö.; Critical Review – A.Ö., H.T.; Other – A.Ö., H.T.

Declaration of Interests: The authors declare that they have no competing interests.

Funding: The authors declared that this study has received no financial support.

REFERENCES

1. Lobbezoo F, Ahlberg J, Raphael KG, et al. International consensus on the assessment of bruxism: report of a work in progress. *J Oral Rehabil.* 2018;45(11):837–844. [\[CrossRef\]](#)
2. Zieliński G, Pająk A, Wójcicki M. Global prevalence of sleep bruxism and awake bruxism in pediatric and adult populations: a systematic review and meta-analysis. *J Clin Med.* 2024;13(14):4259. [\[CrossRef\]](#)
3. Shetty S, Pitti V, Satish Babu CL, Surendra Kumar GP, Deepthi BC. Bruxism: a literature review. *J Indian Prosthodont Soc.* 2010;10(3):141–148. [\[CrossRef\]](#)
4. Lobbezoo F, Jacobs R, De Laat A, Aarab G, Wetselaar P, Manfredini D. Chewing on bruxism. Diagnosis, imaging, epidemiology and aetiology. *Ned Tijdschr Tandheelkd.* 2017;124(6):309–316. [\[CrossRef\]](#)
5. Çebi AT. Ağız ve diş sağlığı öğrencilerinde brüksizm varlığının, farkındalığının ve ilişkili faktörlerin değerlendirilmesi. *Mersin Univ Sağlık Bilim Derg.* 2018;11(3):250–257. [\[CrossRef\]](#)
6. Lazarus RS. *Patterns of Adjustment and Human Effectiveness.* New York, NY: McGraw-Hill;1969.
7. Elani HW, Allison PJ, Kumar RA, Mancini L, Lambrou A, Bedos C. A systematic review of stress in dental students. *J Dent Educ.* 2014;78(2):226–242. [\[CrossRef\]](#)

8. Kumar S, Dagli RJ, Mathur A, Jain M, Prabu D, Kulkarni S. Perceived sources of stress amongst Indian dental students. *Eur J Dent Educ.* 2009;13(1):39–45. [\[CrossRef\]](#)
9. Polychronopoulou A, Divaris K. Perceived sources of stress among Greek dental students. *J Dent Educ.* 2005;69(6):687–692. [\[CrossRef\]](#)
10. Polychronopoulou A, Divaris K. Dental students' perceived sources of stress: a multi-country study. *J Dent Educ.* 2009;73(5):631–639. [\[CrossRef\]](#)
11. Alzahem AM, Van der Molen HT, Alaujan AH, Schmidt HG, Zamakhshary MH. Stress amongst dental students: a systematic review. *Eur J Dent Educ.* 2011;15(1):8–18. [\[CrossRef\]](#)
12. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav.* 1983;24(4):385–396. [\[CrossRef\]](#)
13. Eskin M, Harlak H, Demirkıran F, Dereboy Ç. The adaptation of the perceived stress scale into turkish: a reliability and validity analysis. *New Symp J.* 2013;51(3):132–140.
14. Dawson PE. Evaluation, diagnosis, and treatment of occlusal problems. St. Louis, MO: C.V. Mosby; 1974:231–247.
15. Manfredini D, Fabbri A, Peretta R, Guarda-Nardini L, Lobbezoo F. Influence of psychological symptoms on home-recorded sleep-time masticatory muscle activity in healthy subjects. *J Oral Rehabil.* 2011;38(12):902–911. [\[CrossRef\]](#)
16. Vlăduțu D, Popescu SM, Mercuț R, et al. Associations between bruxism, stress, and manifestations of temporomandibular disorder in young students. *Int J Environ Res Public Health.* 2022;19(9):5415. [\[CrossRef\]](#)
17. Bartlett D, Ganss C, Lussi A. Basic Erosive Wear Examination (BEWE): a new scoring system for scientific and clinical needs. *Clin Oral Investig.* 2008;12(Suppl 1):S65–S68. [\[CrossRef\]](#)
18. Eskin M, Harlak H, Demirkıran F, Dereboy Ç. Algılanan Stres Ölçeğinin Türkçeye Uyarlanması: Güvenilirlik ve Geçerlik Analizi. *New/Yeni Symposium Journal.* 2013:132–140.
19. Güven ME, Altındağ A, Gıca Ş. Diş Hekimliği Öğrencilerinde Sınav Dönemi Algılanan Stres ile Bruksizm İlişkisinin Değerlendirilmesi. *NEU Dent J.* 2021;3(3):122–127.
20. Manfredini D, Winocur E, Guarda-Nardini L, Paesani D, Lobbezoo F. Epidemiology of bruxism in adults: a systematic review of the literature. *J Orofac Pain.* 2013;27(2):99–110. [\[CrossRef\]](#)
21. Pavone BW. Bruxism and its effect on the natural teeth. *J Prosthet Dent.* 1985;53(5):692–696. [\[CrossRef\]](#)
22. Şener S, Karabekiroğlu S, Ünlü N. Genç yetişkin bireylerde bruksizm farkındalığı ve ilişkili değişik faktörlerin değerlendirilmesi. *Cumhuriyet Dent J.* 2014;17(4):361–371. [\[CrossRef\]](#)
23. Nekora-Azak A, Yengin E, Evlioglu G, Ceyhan A, Ocak O, Issever H. Prevalence of bruxism awareness in Istanbul, Turkey. *Cranio.* 2010;28(2):122–127. [\[CrossRef\]](#)
24. Maharani DA, Zhang S, Gao SS, Chu C-H, Rahardjo A. Dental caries and the erosive tooth wear status of 12-year-old children in Jakarta, Indonesia. *Int J Environ Res Public Health.* 2019;16(16):2994. [\[CrossRef\]](#)
25. Duangthip D, Chen KJ, Gao SS, Lussi A, Lo ECM, Chu CH. Erosive tooth wear among preschool children in Hong Kong. *Int J Paediatr Dent.* 2018;29(2):185–192. [\[CrossRef\]](#)
26. Zhang S, Chau AM, Lo EC, Chu C-H. Dental caries and erosion status of 12-year-old Hong Kong children. *BMC Public Health.* 2014;14:1–7.
27. Arıkan V, Vapur KN, Oba AA. Kırıkkale İlinde yaşayan 3–6 Yaşları Arasındaki çocuklarda süt dişi Dental Erozyon Prevalansinin değerlendirilmesi. *Kırıkkale Üniv Tıp Fak Derg.* 2017;19(3):194–203.
28. Imfeld T. Dental erosion. Definition, classification and links. *Eur J Oral Sci.* 1996;104(2):151–155. [\[CrossRef\]](#)
29. Clark GT, Tsukiyama Y, Baba K, Watanabe T. Sixty-eight years of experimental occlusal interference studies: what have we learned? *J Prosthet Dent.* 1999;82(6):704–713. [\[CrossRef\]](#)
30. Sączuk K, Lapinska B, Wilmont P, Pawlak L, Lukomska-Szymanska M. Relationship between sleep bruxism, perceived stress, and coping strategies. *Int J Environ Res Public Health.* 2019;16(17):3193. [\[CrossRef\]](#)
31. Öncü B, Şahin T, Özdemir S, Şahin C, Çakır K, Öcal E. Tıp fakültesi öğrencilerinde depresyon, Anksiyete ve Stres Düzeyleri ve ilişkili Etmenler. *Kriz Dergisi.* 2013;21(1):1–10.
32. Westrup DA, Keller SR, Nellis TA, Hicks RA. Arousal and bruxism in male and female college students. *Percept Mot Skills.* 1992;75(3 Pt 1):796–798. [\[CrossRef\]](#)