

## Determination of oral and dental health knowledge and behaviors of primary school students

## Determinación de los conocimientos y comportamientos en salud bucal y dental de la escuela primaria estudiantes

TURAN, Mehmet†', BOZKURT, Eyup'' and ERDOĞAN, Ramazan\*'''

ˆHatay Mustafa Kemal University, Faculty of Education, Elazığ, Turkey.

ˆˆFirat University, Faculty of Education, Elazığ, Turkey.

ˆˆˆHigh school of Physical Education and Sports, Bitlis Eren University, Bitlis, Turkey.

ID 1<sup>st</sup> Author: Mehmet, Turan / ORC ID: 0000-0001-6963-4827

ID 1<sup>st</sup> Co-author: Eyup, Bozkurt / ORC ID: 0000-0001-8009-3478

ID 2<sup>nd</sup> Co-author: Ramazan, Erdoğan / ORC ID: 0000-0001-5337-942X

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### Abstract

This research was carried out to determine primary school students' knowledge, attitudes, and behaviors about oral and dental health. The research group consisted of students studying in the 3rd and 4th grades in the primary schools in the central district of Elazığ, and the sample group consisted of 420 (218 Female, 202 Male) volunteer students studying in the 3rd and 4th grades in the primary schools in the central district. As a data collection tool, a questionnaire form was applied in which the demographic information of the students and their oral and dental health knowledge and behaviors were questioned. The data were analyzed by using the SPSS package program and the significance was accepted as  $p < 0.05$ . When the research group's oral health knowledge and behaviors were examined, it was found that the majority of the students (69.6%) brushed their teeth twice or three times a day, and the majority had good oral and dental health. It was determined that 84.5% of the students brushed their teeth after meals and before going to bed to prevent their teeth from decaying. It was determined that most parents of the participants in the research group (289 people) had the habit of brushing their teeth, and the participants learned the first information about brushing from their families. It was seen that there was a significant difference between the frequency of tooth brushing of the participants and the gender variable, and in the frequency of brushing teeth twice or more times a day, women brushed their teeth more than men. It was determined that there was a significant difference between the frequency of students' brushing their teeth and the age variable, and the rate of tooth brushing increased as the age value increased. Consequently, to create a healthy society, informing and taking precautions about preventive oral and dental health from an early age will contribute to reducing oral and dental diseases that may occur in the future.

Knowledge, Primary school students, Dental health, Oral health, Healthy society

### Resumen

Esta investigación se llevó a cabo para determinar los conocimientos, actitudes y comportamientos de los estudiantes de primaria sobre la salud bucal y dental. El grupo de investigación estaba formado por estudiantes que estudiaban en los grados 3 y 4 en las escuelas primarias del distrito central de Elazığ, y el grupo de muestra estaba formado por 420 (218 mujeres, 202 hombres) estudiantes voluntarios que estudiaban en los grados 3 y 4 en la escuela primaria. colegios del barrio centro. Como herramienta de recolección de datos se aplicó un formulario de cuestionario en el que se cuestionaron los datos demográficos de los estudiantes y sus conocimientos y conductas en salud bucal y dental. Los datos se analizaron utilizando el paquete de programas SPSS y se aceptó la significancia como  $p < 0.05$ . Cuando se examinaron los conocimientos y comportamientos de salud bucal del grupo de investigación, se encontró que la mayoría de los estudiantes (69,6%) se cepillaban los dientes dos o tres veces al día, y la mayoría tenía buena salud bucal y dental. Se determinó que el 84,5% de los estudiantes se cepillaban los dientes después de las comidas y antes de acostarse para evitar la caries dental. Se determinó que la mayoría de los padres de los participantes del grupo de investigación (289 personas) tenían el hábito de cepillarse los dientes, y los participantes aprendieron las primeras informaciones sobre el cepillado de sus familiares. Se vio que hubo una diferencia significativa entre la frecuencia de cepillado dental de los participantes y la variable género, y en la frecuencia de cepillado dental dos o más veces al día, las mujeres se cepillaron más los dientes que los hombres. Se determinó que hubo una diferencia significativa entre la frecuencia de cepillado dental de los estudiantes y la variable edad, y la tasa de cepillado dental aumentó a medida que aumentó el valor de la edad. En consecuencia, para crear una sociedad sana, informar y tomar precauciones sobre la salud bucodental preventiva desde edades tempranas contribuirá a reducir las enfermedades bucodentales que puedan presentarse en el futuro.

Conocimiento, Estudiantes de primaria, Salud dental, Salud bucal, Sociedad saludable

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\* Correspondence to Author (Corresponding author: Ramazan ERDOĞAN, E-mail: ramaznerdogan@hotmail.com)

† Researcher contributing as first author.

## Introduction

Oral diseases, which generate deformity, pain, and death by affecting people throughout their lives, have been creating a health disadvantage for many countries in the past and today, and it is thought that almost 3.5 billion people are affected by oral diseases (Çolakoğlu and Has, 2015; Gonzales Roncal, 2022). In 2018, approximately 18.1 million new types of cancer were identified worldwide, and 9.6 million people died from cancer. One of these cancer types is the mouth or lip cancer and it is common in some countries of the Asian continent and the Pacific (Bhagat *et al.*, 2020). Oral and dental health has become very important in this regard.

Health concerns society in every sense and in every field. Oral and dental health is integrated with general health and has become an inseparable part. Disorders related to oral and dental health greatly affect all aspects of people's lives and change their lives. In order for public health to reach an advanced level, it is necessary to improve the health of the people. One of the most important things affecting the physical health, aesthetic appearance, and quality of life of the individual is oral and dental health. In order for oral and dental health to be in a way that does not disturb the individual, it is necessary to have good care and control starting from childhood (Yasemin *et al.*, 2017). Problems related to oral and dental health last from infancy to old age, and the World Health Organization has taken the 5, 12 and 15 age groups as a basis for determining the level of dental and oral health of countries. In addition, the World Health Organization stated that children should be examined at the ages of 5 and 6 (Yılmaz *et al.*, 2021). Individuals should be educated, especially in early childhood, in order to prevent diseases that may occur related to oral and dental health.

In line with the studies carried out, it is possible to have good health in society only by having a healthy mouth and teeth. Education of preschool and school-age children is very important to continue this process healthily. It is said that to have a healthy society in the future, it is necessary to raise awareness of people and this can be gained in early childhood (Al-Wesabi *et al.*, 2019). One of the most important issues to be taught in early childhood is to have a healthy mouth and teeth. It is thought that behaviors that play an important role in the later stages of life, such as protecting oral and dental health in children and acquiring the habit of brushing teeth, are acquired in early childhood. Since a child in primary school does not pay attention to oral and dental health, many health problems arise.

Children are especially affected by the behavior of their teachers and families during these periods. Although the topics related to the protection of oral and dental health are mentioned in the school curriculum, if this situation is not maintained in the family, tooth decay and various dental disorders may occur in children (Eden *et al.*, 2019). These decayed teeth can affect children's entire lives. The quality of life of a child who suffers from oral and dental health problems decreases, he may not be able to go to school due to severe pain, and accordingly, he falls behind in his lessons, and his learning skills are negatively affected. In addition to these negative situations, eating, drinking and sleep disorders occur in children (AlSadhan *et al.*, 2017). Therefore, children should be given a good education in this regard. One of the reasons for the emergence of dental caries, one of the oral and dental diseases, is that individuals and children are not given adequate education. It has been revealed by researchers that diseases such as dental caries and tooth loss can occur if education is not given well.

The training, called "oral hygiene education", is given to both the mother and the child between the ages of 6 and 18, starting from the pregnancy period. Taking into account the comprehension skills of children, factors affecting both oral and dental health such as "mouth-tooth cleaning, teaching tooth brushing technique, teaching techniques for using dental floss and interface brushes, nutrition, and abrasive motivation training and diet regulation" are explained in the education (Halawany *et al.*, 2015; Hassan *et al.*, 2020). By acting together with dentists, families can provide children with the right brushing technique, use of dental floss, and regular eating habits, and if these are achieved with this cooperation, children will have healthy mouths and teeth (Birant *et al.*, 2021). In addition to families, studies can be carried out in schools and students can be supported. In this way, oral and dental health education that can be given to children enables the development of personal hygiene skills of children, a positive attitude, and raising a healthy individual (Baltacı *et al.* 2019; Brito-Pérez *et al.*, 2022). For this reason, training in this field can be given to teachers at school and parents who prepare their children for life by performing home education.

## Methods

### Research model

The research was conducted based on examining the oral and dental health and care status of primary school students. The research is a scanning model and has a descriptive nature.

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## Universe-Sample

The research population consists of students studying in the 3rd and 4th grades in primary schools in the central district of Elazığ in the 2019-2020 academic year, and the sample group consists of 420 (218 Female, 202 Male) volunteered students studying in the 3<sup>rd</sup> and 4<sup>th</sup> grades in the primary schools in the central district of Elazığ.

## Data collection tools

In the study, data were collected with the "Oral and Dental Health Care Questionnaire of Primary School Students" developed by the researchers. The questionnaire includes the demographic characteristics of the participants (gender, age, education grade) and questions regarding oral and dental health and care.

## Analysis of data

SPSS package program was utilized to evaluate the data obtained in the research. The demographic information of the research group and their knowledge of oral and dental health were summarized with the help of "arithmetic mean, percentage, frequency" statistics. A Chi-square test was applied to determine the differences between the demographic characteristics of the research group and the knowledge and practices of oral and dental health.

## Results

		Frequency	Percent (%)
<b>Gender</b>	Female	218	51.9
	Male	202	48.1
<b>Age</b>	8 years	45	10.7
	9 years	163	38.8
	10 years	195	46.5
	11 years	17	4
<b>Grade</b>	3 <sup>rd</sup> grade	177	42.1
	4 <sup>th</sup> grade	243	57.9

**Table 1** Students' demographic characteristics

The examination of Table 1 showed that the research group consisted of 218 (51.9%) females, 202 (48.1%) males; 45 students (10.7%) were 8 years old, 163 students (38.8%) were 9 years old, 195 students (46.5%) were 10 years old, and 17 students (4%) were 11 years old. It was determined that 177 students (42.1%) were in the 3<sup>rd</sup> grade and 243 students were in the 4<sup>th</sup> grade.

		Frequency	Percent (%)
How often do you brush your teeth?	Once a day	79	18.8
	Twice a day	188	44.8
	Three times a day	104	24.8
	Other	49	11.6
How do you brush your teeth?	Down-Up	117	27.9
	Right-Left	157	37.4
	Circular	70	16.7
	Other	76	18.1
How long does it take you to brush your teeth?	0-1 minute	105	25
	1-2 minutes	180	42.9
	2-3 minutes	95	22.6
	More than 3 minutes	40	9.5
When do you brush your teeth in the morning?	I never brush	52	12.4
	As soon as I get up	63	15
	Before breakfast	41	9.8
	After breakfast	264	62.9
When do you brush your teeth in the evening?	I never brush	33	7.9
	Before dinner	21	5
	After dinner	129	30.7
	Before going to bed	237	56.4
How much toothpaste do you consume when brushing your teeth?	As big as a lentil	194	46.2
	Half of Toothbrush	162	38.6
	Whole of Toothbrush	43	10.2
	Other	21	5
Evaluate your oral and dental health?	Very good	117	27.9
	Good	138	32.9
	Normal	130	31
	Bad	26	6.1
	Very bad	9	2.1
What are your parents' tooth brushing habits like?	Mum brushes	30	7.1
	Dad brushes	22	5.2
	Both of them brush	289	68.8
	Neither of them brushes	38	9
	I don't know	41	9.8
What do you do to prevent your teeth from decaying?	I brush my teeth carefully before every meal	355	84.5
	I drink water after sugary foods	195	46.4

	I go to the dentist every six months	169	40.2
	I do nothing	28	6.7
	I don't know	26	6.2
How often have you experienced pain in your teeth in the last year?	Usually	51	12.1
	Often	58	13.8
	Occasionally	67	16
	Rarely	131	31.2
	Never	113	26.9
Who / What did you first learn about brushing tooth from?	Family	252	60
	Teacher	45	10.7
	Television, radio, newspaper etc	8	1.9
	Dentist	74	17.6
	I don't know	41	9.8
Why is regular dental check-up necessary?	For early diagnosis	21	5
	For the protection of dental health	303	72.1
	For the continuity of general health	67	16
	For cheap and easy treatment	8	1.9
	I don't know	21	5
Which one do you use for oral hygiene?	Floss	36	8.6
	Toothbrush	364	86.7
	Toothpick	45	10.7
	Mouthwash	99	23.6
	Gum	105	25
	Electric Toothbrush	20	4.8

**Table 2** Findings Regarding Students' Oral and Dental Health and Care

*\* More than one option was marked in those items "Which one do you use for oral hygiene? and What do you do to prevent your teeth from decaying?"*

By examining how often the participants brushed their teeth in Table 2, it was found out that 188 people stated they brushed their teeth twice a day, 104 people brushed three times a day, and 79 people brushed once a day. Accordingly, the majority of the participants (69.6%) brushed their teeth twice or three times a day.

By examining how the participants brushed their teeth in Table 2, it was found that 157 people stated that they brushed their teeth from right to left, 117 people brushed their teeth up-down, and 70 people circularly brushed their teeth.

By examining how long the research group brushed their teeth in Table 2, it was determined that 180 people brushed their teeth between 1-2 minutes, 105 people brushed their teeth between 0-1 minutes, 95 people brushed their teeth between 2-3 minutes and 40 people brushed their teeth for more than 3 minutes.

By examining when the students brushed their teeth in the morning in Table 2, 264 people stated that they brushed their teeth after breakfast, 63 people brushed their teeth as soon as they got up, and 41 people said they brushed their teeth before breakfast. 52 people stated that they did not brush their teeth in the morning.

By examining when the participants brushed their teeth in the evenings in Table 2, 237 people stated that they brushed their teeth just before going to bed, 129 people stated that they brushed their teeth after eating and 21 people stated that they brushed their teeth before eating. 33 people stated that they did not brush their teeth in the evening.

The examination of the amount of toothpaste consumed by the research group while brushing their teeth from table 2 showed that 194 people consumed as size as a lentil while brushing their teeth, 162 people consumed as half amount as a toothbrush and 43 people consumed as size as the entire toothbrush.

The evaluation of the oral and dental health of the participants from their own perspective in Table 2 revealed that 117 people stated their oral and dental health as very good, 138 people stated as good, 130 people stated as normal, 26 people stated as bad, and 9 people stated as very bad.

The parents' habit of tooth brushing from Table 2 revealed that 30 participants stated that only their mothers brushed, 22 participants stated that only their fathers brushed, 289 participants stated that both their mothers and fathers brushed, and 38 participants stated neither of them brushed.

The examination of what the participants did to prevent their teeth from decaying revealed that 84.5% (355 people) stated they brushed their teeth after each meal and before going to bed to prevent their teeth from decaying. 195 people (46.4%) stated that they drank water after eating sugary foods, and 169 people (40.2%) went to the dentist every six months.

The examination of how often the participants experienced pain or distress in their teeth in the last year in Table 2 revealed that 58.1% never had or had very little trouble. In addition, 25.9% of the participants stated that they usually or frequently experienced pain or distress related to their teeth.

From whom or where the research group first learned about tooth brushing, the examination showed that 60% of the participants (252 people) learned the first information from their families. It was also determined that 74 people learned the first information about brushing from their dentists and 45 people from their teachers.

The examination of the answers given by the participants to the question of the reasons for regular dental check-ups from Table 2 revealed that 72.1% (303 people) expressed that regular dental check-ups were necessary for maintaining dental health. 16% of the participants expressed that regular dental check-ups were necessary to continue general health.

The examination of the answers given by the research group to the question of what was used for oral hygiene in Table 2 revealed that 86.7% (364 people) used toothbrushes for oral hygiene. In addition, 105 people stated that they used chewing gum and 99 people used mouthwash.

**The relationship between the demographic characteristics of the students and the expressions regarding oral and dental health in the scope of the research**

		Tooth Brushing Frequency * Gender Crosstabulation				Total	
		Once a day	Twice a day	Three times a day	Other		
Gender	Female	N	33	99	64	218	
		% Gender	15.1%	45.4%	29.4%	10.1%	100.0%
		% Brushing Frequency	41.8%	52.7%	61.5%	44.9%	51.9%
	Male	N	46	89	40	27	202
		% Gender	22.8%	44.1%	19.8%	13.4%	100.0%
		% Brushing Frequency	58.2%	47.3%	38.5%	55.1%	48.1%

Pearson Chi-Square: 8,122  
Exact Sig. (p): 0,044<0,05

**Table 3** Crosstabulation and Chi-Squared test results between students' tooth brushing frequency and gender

The examination of Table 3 revealed a statistically significant relationship between the answers given to the question of “How often do you brush your teeth?” and the gender of the participants. While the frequency of brushing teeth once a day was higher for men (52.8%) than women (41.8%), the frequency of brushing teeth 3 times a day was higher for women (61.5%) than for men (38.5%). It was also determined that 45.4% of the women and 44.1% of the men in the research group brushed their teeth twice daily.

		Brushing frequency * Age Crosstabulation				Total	
		Once a day	Twice a day	Three times a day	Other		
Age	8 years old	N	5	18	6	16	45
		% Age	11.1%	40.0%	13.3%	35.6%	100.0%
		% Brushing Frequency	6.3%	9.6%	5.8%	32.7%	10.7%
	9 years old	N	37	69	43	14	163
		% Age	22.7%	42.3%	26.4%	8.6%	100.0%
		% Brushing Frequency	46.8%	36.7%	41.3%	28.6%	38.8%
	10 years old	N	28	98	50	19	195
		% Age	14.4%	50.3%	25.6%	9.7%	100.0%
		% Brushing Frequency	35.4%	52.1%	48.1%	38.8%	46.4%
	11 years old	N	9	3	5	0	17
		% Age	52.9%	17.6%	29.4%	0.0%	100.0%
		% Brushing Frequency	11.4%	1.6%	4.8%	0.0%	4.0%

Pearson Chi-Square: 48,554  
Exact Sig. (p): 0,000<0,01

**Table 4** Crosstabulation and Chi-Square test results between students' brushing frequency and their ages

The evaluation of Table 4 showed a statistically significant difference between the answers given to the questions of "How often do you brush your teeth?" and “When do you brush your teeth in the evening?” and the ages of the participants. According to this, by looking at general daily brushing frequency, it was determined that the highest participation frequency was in 10-year-old students.

It was determined that 35.4% of 79 students brushing their teeth once a day was 10 years old, 52.1% of 188 students brushing twice a day, and 48.1% of 104 students brushing three times a day were 10 years old. By examining the distribution of brushing frequencies in terms of the ages of the students, it was seen that the brushing rate increased as the age value increased in the 8-year, 9-year-old and 10-year-old students.

		Brushing Time in Evenings * Age Crosstabulation					Total
		Brushing Frequency					
		I never brush	Before Meals	After Meals	Before going to bed		
Age	8 Years old	N	9	2	10	24	45
		% Age	20.0%	4.4%	22.2%	53.3%	100.0%
		Brushing Time in Evenings	27.3%	9.5%	7.8%	10.1%	10.7%
9 Years old	N	13	11	56	83	163	
	% Age	8.0%	6.7%	34.4%	50.9%	100.0%	
	Brushing Time in Evenings	39.4%	52.4%	43.4%	35.0%	38.8%	
10 Years old	N	9	7	57	122	195	
	% Age	4.6%	3.6%	29.2%	62.6%	100.0%	
	Brushing Time in Evenings	27.3%	33.3%	44.2%	51.5%	46.4%	
11 Years old	N	2	1	6	8	17	
	% Age	11.8%	5.9%	35.3%	47.1%	100.0%	
	Brushing Time in Evenings	6.1%	4.8%	4.7%	3.4%	4.0%	

Pearson Chi-Square: 17.747  
Exact Sig. (p): 0.038<0.05

**Table 5** Crosstabulation and Chi-Square test results of students' age and brushing time in evenings

In the examination of students' brushing time their teeth in the evening from Table 5, it was determined that the 10-year-old students brushed their teeth at the highest rate with 62.6%. Similarly, 51.5% of the students who stated that they brushed their teeth before going to bed were 10 years old. In addition, it was determined that the students in all age groups brushed their teeth before going to bed at the highest rate.

## Discussion

Though oral diseases are not vital in general, according to the World Health Organization's definition of health, they pose a significant risk to individuals' physical, mental and social well-being. This situation, In addition to affecting the needs of people in their daily lives such as aesthetic concerns, eating, talking, and socializing, also have negative consequences on general well-being and quality of life (AlSadhan et al., 2017). In this context, individuals need to make oral and dental health a habit from an early age. This study aimed to determine the oral health habits and knowledge levels of primary school students.

In the examination of the brushing frequency of the research group, 188 of the participants stated that they brushed their teeth twice a day, 104 participants three times a day, and 79 participants once a day. According to these results, it was seen that the majority of the participants (69.6%) brushed their teeth twice or three times a day.

It was determined that the majority of the students brushed their teeth for one minute or over, and more than half of them brushed their teeth before going to bed. According to the evaluation of the student's oral and dental health from their own perspective, 117 people stated that their oral and dental health was very good, 138 people stated as good, 130 people stated as normal, 26 people stated as bad and 9 people stated as very bad. According to these results, most of the students stated their oral and dental health as good. Most of the participants (289 people) in the research group stated that both their mothers and fathers had the habit of brushing their teeth. 84.5% of the students stated that they brushed their teeth after every meal and before going to bed to prevent their teeth from decaying.

58.1% of the participants stated that they experienced little or no pain in their teeth. 60% of the students stated that they learned the first information about brushing from their families. 72.1% of the participants stated that regular dental check-ups were necessary for the protection of dental health. 86.7% of the students stated that they used a toothbrush for oral hygiene. Bhagat et al. (2020), in their study examining the factors affecting the oral and dental health status of primary school first-grade students, stated that the majority of students brushed their teeth irregularly or not at all, and 58% of them never went to the dentist. They determined that 58.2% of the students brushed their teeth regularly, at least once a day, 97.3% did not use dental floss, and the majority of them went to the dentist for treatment purposes.

Çolakoğlu and Has (2015) reported that 86% of the students brushed their teeth twice or more a day, 56% used dental floss regularly, and female students had better oral and dental health care behavior than male students. In their study, they found that 18.8% of the students went to the dentist in the last year, 62.2% brushed their teeth at least twice a day, and 77.7% had oral and dental health problems. In addition, they stated that the oral and dental health knowledge levels of the students were medium and low. Halawany et al. (2015) reported in their study that the oral hygiene habits of students aged 9-12 were moderate, and 42.4% of them brushed their teeth twice a day. In their study, Peker et al. (2017) stated that 58.4% of primary school students living in rural areas brushed their teeth occasionally, 35.3% brushed their teeth every day, and 6.4% did not brush their teeth at all. It was also determined that 55.5% of the students brushed their teeth after meals, 29.6% in the morning, and 14.8% before going to bed. Yasemin et al. (2017) examined the oral and dental health of primary school students in Denizli within the project's scope.

They found the rate of students going to the dentist in the first year was 45.6%, it was 41.4% in the second year, and 39.5% in the third year. The percentage of students brushing their teeth regularly was 21.5% in the first year, 22.5% in the second year, and 24.8% in the third year, and the rate of students with poor oral hygiene was 20% in the first year, 16.3% in the second year and 14.5% in the third year. In the study conducted by Karaaslan et al., (2020), 14.1% of the students stated that they regularly went to the dentist; the participants used the internet to access information about oral and dental health, and they did not have enough information about oral and dental health.

It was seen that there was a statistically significant relationship between the answers given to the question of “How often do you brush your teeth?” and the gender of the participants. Regarding the frequency of tooth brushing once a day, men (52.8%) brushed their teeth more than women (41.8%) did while regarding the frequency of tooth brushing three times a day, women (61.5%) brushed their teeth more than men (38.5%) did. In addition, it was determined that 45.4% of the women and 44.1% of the men in the research group brushed their teeth twice a day. In their study, Birant et al. (2021) stated that 68.9% of the students brushed their teeth at least twice a day, the frequency of brushing was higher among women than men, a small group of the students used toothpaste as big as lentils while brushing, and more than half of the students stated that they went to the dentist. They found in their study that the frequency of tooth brushing and going to the dentist of female students was higher than male students. Eden et al. (2019) evaluated the oral and dental health of university students, and they found that there was no significant difference in terms of gender. They also detected that 11.92% of the students did not brush regularly, 33.88% brushed once a day, 54.10% of them brushed their teeth twice a day. Yılmaz et al. (2021) reported in their study that 64.2% of the students had poor oral health, 53.2% had insufficient knowledge about oral health, and women had more oral health awareness than men. They found that 74.2% of female and 52.8% of male students brushed their teeth regularly, 40% of the students brushed after every meal, 32.5% brushed when they remembered, and 45.8% learned about dental health from school. Duijster et al., (2015), in their study, stated that there was a significant relationship between the oral health of the students and the gender variable, and that the majority of the students had poor oral hygiene.

Koşan et al., (2017) evaluated the oral and dental health of children aged 7-14 in Malatya province and stated that there was no statistical difference in terms of gender and female students' rate of brushing was higher than male students'. Mishra et al., (2018) found in their study that secondary school students had moderate knowledge about oral health and a significant relationship between oral health and gender. Mekhemar et al., (2020) determined the knowledge and behaviors of secondary school students aged 11-12 on oral and dental health, and found that there was a significant difference between the oral dental health knowledge score average and the settlement where they lived, their fathers' education level and income; on the other hand, they determined that there was no significant difference according to gender, mother's education level, family structure, health insurance status, and job status of mother and father. et al., (2016) determined the oral hygiene status of students in the 7-12 age group and reported that 65.2% of the students had good oral hygiene status and that there was a significant relationship between oral hygiene and gender. They evaluated oral dental problems and risk factors of students in low socioeconomic status and found that there was a significant difference in all variables except gender in terms of poor oral hygiene. They also stated that children living in economically disadvantaged areas had dental caries and oral hygiene problems, and they were disadvantageous in terms of seeing a dentist and receiving treatment.

It was determined that there was a statistically significant difference between the answers given to the statements of “How often do you brush your teeth?” and “When do you brush your teeth in the evening?” and the ages of the participants. Examining the daily brushing frequency of the students in general, it was determined that the highest participation frequency was in the 10-year-old student group. According to the distribution of brushing frequencies in terms of the ages of the students, it was observed that the brushing rate increased as the age value increased in the 8-year-old, 9-year-old, and 10-year-old student groups. The examination of students' time to brush their teeth in the evening revealed that the 10-year-old students brushed their teeth at the highest rate with 62.6%, before going to bed. Similarly, 51.5% of the students who stated that they brushed their teeth before going to bed were 10 years old. In addition, it was determined that the students in all age groups brushed their teeth before going to bed with the highest rate. In another study, Baltacı et al., (2019) determined that the majority of students brushed their teeth before going to bed, and 53.7% brushed after breakfast.

Al-Wesabi *et al.*, (2019), in their study examining the relationship between sports and oral-dental health, stated that high school sports students were more prone to cariogenic nutrition, and the frequency of tooth brushing was weak. In addition, they determined that the oral-dental health hygiene habits of individuals doing sports were not at a sufficient level. Hassan *et al.*, (2020) found in their study that 79% of the students never went to the dentist, 78% of them brushed their teeth at least once a day, and the rate of brushing increased according to age. In their study, Hosseini *et al.*, (2016) reported that 67% of students aged 10-18 brushed their teeth every day, and girls had more oral and dental health knowledge than boys. They also reported that the frequency of tooth brushing was at the same rates that were reported 10 years ago. They stated in their study that 38.3% of those who had a toothbrush brushed their teeth 2-3 times a day, the majority did not use any auxiliary cleaning materials other than toothbrush and paste; and the rate of those who did not go to the dentist increased in younger ages

### Conclusion

Given the results of the current study, it was determined that the majority of the students brushed their teeth two or three times a day, more than half of them brushed their teeth before going to bed, and most of them had good oral and dental health and received information about oral and dental health from their families. In addition, it was determined that there was a significant relationship between students' frequency of tooth brushing and the variables of gender and age. As a result of these findings, to create a healthy society, informing and taking precautions about preventive oral and dental health from an early age will contribute to reducing oral and dental diseases that may occur in the future.

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