Cumhuriyet Dental Journal: 2020; 23(3)
e-ISSN 2146-2852
Doi:10.7126/cumudj.748046

Original research

INFLUENCE OF CARIES AND ORAL HEALTH STATUS ON THE PREVALENCE OF DENTAL EROSION IN 7–14-YEAR-OLD-CHILDREN IN SIVAS, TURKEY

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ABSTRACT

Objective: To determine the prevalence of erosion of schoolchildren, and to reveal the relationship between the dental caries, gingival health status, dental plaque levels and dental erosion.

Materials and methods: A cross-sectional analysis was performed on a representative sample of 473 children (aged 7─14 years). The O'Sullivan, Decayed-Missing-Filled (DMF), Plaque, and Gingival indices were used during the examination of the children. The values were evaluated using chi-square test, Tukey's test, and multivariate logistic regression analysis.

Results: Dental erosion was observed in 21.8% of the children. Lesions were mostly observed in the enamel but less than a half of the buccal surface was affected. Erosion was found to be statistically higher in older children (p=0.001). There was no statistically significant relationship between the children's gender and erosion level (p=0.157). A higher level of erosion was observed in children with high DMFT and DMFS values and low dft and dfs values (p<0.05); children with dental erosion had higher plaque and gingival indices (p<0.05).

Conclusion: Though limited to the enamel, the prevalence of erosion was high and was associated with age, dental caries, dental plaque, and gingival inflammation.

Key words: Dental caries, tooth erosion, dental plaque indices.

Received : 04.06.2020
Accepted : 04.08.2020

How to Cite: Kaptan A, Korkmaz E. Influence of Caries and Oral Health Status on the Prevalence of Dental Erosion in 7–14-Year-Old-Children in Sivas, Turkey. Cumhuriyet Dent J 2020;23:3:221-231.
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INTRODUCTION

It has been reported that biological factors play an important role in determining sensitivity to dental erosion in hard dental tissues.[1] It is known that, given the suitable conditions, the pellicle or dental plaque on the surface of teeth acts as a reservoir for ions that prevent demineralization on the dental surface and promote remineralization, thus reducing tooth erosion sensitivity.[2] The pellicle is assumed to protect against erosion by acting as a diffusion barrier or a selectively permeable membrane that prevents direct contact between acids and the tooth surface; it has been shown that at least its basal structure survives relatively severe acid exposures.[3] In vitro experiments have indeed demonstrated its protective effects after relatively mild acid challenges[4], but to a lesser extent under more severe conditions.[5] In no case, however, was the protection against erosive dissolution complete. An in-situ study showed that consumption of soft drinks for only 20 seconds led to a decrease in surface microhardness even though the pellicle structure survived on the tooth surface.[6]

Hard dental tissue abrasions, especially dental erosion, pose an increasing problem in industrialized societies due to the type of diet and habits preferred by individuals living in these areas. Dental erosion is a chronic, localized, painless, progressive, and irreversible loss of hard dental tissues. In erosion lesions, hard dental tissue undergoes chemical destruction due to exposure to acids in the absence of bacteria.[7]

Dental erosion may affect both primary and permanent teeth. If the source of erosion that occurs in primary teeth is not found, and necessary precautions are not taken, erosion formation in permanent teeth will be inevitable. Additionally, because the pulp is broad in young permanent teeth, erosion-related pulp inflammation and exposure may occur.[8] For these reasons, it is important to diagnose dental erosion in children at early stages and take protective measures in order to prevent permanent teeth from being affected by erosion.

Increased consumption of acidic foods and drinks today due to changes in lifestyle and diets has increased the incidence of erosion.[9] Increased prevalence of dental erosion has led to an increase in the number of studies on this topic.[10]

Previous studies have shown that the etiology of erosion is multi-factorial and substantially affected by clinical issues (dental plaque and caries), behavioral factors (dietary habits and oral hygiene habits), systemic diseases (gastroesophageal reflux disease, asthma), and demographic and socioeconomic factors.[11-14] It is known that factors such as the type of acid contained in foods and drinks, forms of consumption and pH values affect the erosive potential of such foods and drinks. The sensitivity levels of individuals to erosion may also differ and it is believed that saliva has a significant effect on the formation and severity of caries in addition to erosion. Due to the sugar content and acidic nature of carbonated drinks, caries and erosion may be expected to occur simultaneously.[2]

Hence, the purpose of this study was to determine the prevalence of dental erosion of children aged 7 to 14 years, to learn about the dental caries, gingival health status, and dental plaque levels of the children included in the study, and to reveal the relationship between these parameters and dental erosion, and this way, contribute to protective-preventive practices.

MATERIALS AND METHODS

Obtaining Ethics Committee Approval and Required Permissions

The ethics committee report required for our study was obtained from the Clinical Research Ethics Committee of Cumhuriyet University (ID: 2017-09/03). The official permissions required for the study were obtained from the Research Planning Board of the Sivas Provincial Directorate of National Education.

Sample Selection and Sample Size Calculation

This study was a cross-sectional analysis of children aged 7–14 years, who were studying in different primary and secondary school schools in the provincial center of Sivas, selected through the convenience sampling method.

Out of 44,024 students aged 7–14 years in the provincial center of Sivas, a total of 473 participants (209 primary school students; 264 secondary school

students) were included in the study using the following formula (α=0.05, d=±0.05, p=0.30, q=0.70, t=1.96 / n=[N.t^2.p.q] / [(N-1).d^2 + t^2.p.q]).

Eleven schools — six primary schools and five secondary schools—representing 20% of the schools, were selected using the cluster sampling method. We determined how many students would be taken from each school by using the proportional selection method in the stratified sampling method. Individuals who were receiving orthodontic treatment, those with neurological/psychological problems, individuals using dental prostheses, individuals with communication problems, and individuals who had previously been treated for dental erosion were not included in the study.

Calibration of the Surveyor

Measurements were performed by the researcher E.T. during dental examinations. Calibration of the surveyor was ensured by an expert pedodontist (A.K.) who had experience in dental erosion in the Department of Pediatric Dentistry, Faculty of Dentistry, Cumhuriyet University. The calibration of the surveyor was first carried out on a photograph before the start of the study, and subsequently on 50 children aged 7–14 who presented to the pediatric dentistry clinic.

Distribution of the Informed Consent Forms

The schools where intraoral examinations would be performed were visited one day prior to the examination days. In cooperation with the school administration, each student was given an informed consent form to be sent to the family of the student. On the visit day of the examinations, the children who brought a signed consent form from their legal guardian were included in the study.

Conducting Intraoral Examinations

The study was conducted between October 2018 and December 2018. The children were orally examined in the school building in a room consisting of a table and a chair in the students' own classes. Examination sets (each consisting of a sterilized mouth mirror, a probe, and a dental tweezer), disposable cotton rolls, gloves, face masks, and an examination light pen (Varta Led Pen Light, Dischingen, Germany) held by the researcher were used during the examinations. The examinations were carried out under the illumination of a light pen in detail in terms of dental erosions and dental cavities by cleaning and drying all tooth surfaces with the help of cotton rolls after the children were examined in terms of dental plaques and gingival health. The examination results were obtained by using the O'Sullivan Index[15] (Table 1) for dental erosion, the Decayed-Missing-Filled (DMF) Index (based on the WHO caries criteria for cavities)[16], the Plaque Index (PI) for dental plaques (PI)[17] (Table 2), and the Gingival Index (GI)[18] (Table 2) for gingival inflammation, and these findings were recorded on an examination form.

After completion of the examinations, the students received oral hygiene training and advice on dietary regulation and protection from dental erosion. Dental treatment needs of the children included in the study were determined and reported to their parents in writing after intraoral examinations of the children were performed.

Table 1: O'Sullivan (2000) index.[15]

Site of erosion on each tooth represented by an alphabet	
Code A	Labial only
Code B	Palatal only
Code C	Incisal/occlusal only
Code D	Labial and incisal/occlusal
Code E	Palatal and incisal/occlusal
Code F	Multi-surface
Grade of severity denoted by a number (worst score for any individual tooth recorded)	
Code 0	Normal enamel
Code 1	Matt appearance of the enamel surface with no loss of contour
Code 2	Loss of enamel only
Code 3	Loss of enamel with exposure of dentin (ADJ visible)
Code 4	Loss of enamel and dentin beyond ADJ
Code 5	Loss of enamel and dentine with exposure of pulp
Code 9	Unable to assess (e.g. tooth crowned or large restoration)
Area of surface affected by erosion (denoted by a +/- sign)	
Code -	Less than half of the surface affected
Code +	More than half of the surface affected

Table 2. Plaque index[15] (PI) (Silness and Löe) and Gingival index[16] (GI) (Löe and Silness).

Plaque index		Gingival index	
0	No plaque	0	No swelling
1	Thin visible plaque, difficult to identify	1	Mild swelling, no bleeding after gentle probing
2	Thick visible plaque, easily detected	2	Moderate to severe gingival swelling, bleeding after air drying
3	Presence of plaque filling the interproximal region	3	Severe inflammation; redness and edema. Ulceration. Spontaneous bleeding tendency

After completion of the examinations, the students received oral hygiene training and advice on dietary regulation and protection from dental erosion. Dental treatment needs of the children included in the study were determined and reported to their parents in writing after intraoral examinations of the children were performed.

Statistical Analysis

The data collected in our study were analyzed with the SPSS 22.0 software (version 24.0; SPSS, Inc., Chicago, IL, USA). The Kolmogorov-Smirnov test was used to test the normal distribution of the data. The analysis involved independent-samples Tukey's test (relationships between 'DMFT, DMFS, dfs and dft' and 'gender and dental erosion' and between age and dental erosion) and chi-squared test in 2x2 and nxm crosstabulations in an analysis of data obtained by counting (relationships between 'gingival index and plaque index' and 'gender and dental erosion'). Our data are shown in the tables as arithmetic means, standard deviations, and numbers and percentages of individuals. The percentage of error was considered to be 0.05.

RESULTS

The study included 473 schoolchildren (245 females and 228 males) aged 7-14 years old (mean: 10.16±2.04). Out of the 473 participants, 103 (21.8%) were found to have dental erosions. A total of 329 teeth of the 103 students who were found to have dental erosion were affected by erosion. Out of these 329 teeth, 312 (94.8%) were permanent teeth, whereas 17 (5.2%) were primary teeth. Some of the teeth (11.6%) were found in the mandible, whereas most of them (88.4%) were found in the maxilla (Table 3).

Table 3. The distribution of teeth detected in dental erosion.

	Maxilla n/(%)	*Mandibular n/(%)*	*Total n/(%)*
Permanent teeth	279 (84.7)	33 (10.1)	**312 (94.8)**
Primary teeth	12 (3.7)	5 (1.5)	**17 (5.2)**
Total	**291 (88.4)**	**38 (11.6)**	**329 (100.0)**

The teeth most frequently affected by dental erosion were the teeth numbered 21, 11, 22, and 12 (listed in descending order of frequency). Among the primary teeth, the teeth most frequently affected were numbered 63 and 53. The erosion score most frequently recorded was A1(-), which was found in 47.4% of the total eroded teeth, followed by A2(-), A1(+), and C1(-) in descending order of frequency (Table 4). The teeth surfaces that were affected the most by erosion were the labial and buccal surfaces, and when the severity of erosion on the affected surfaces was examined, the most frequently observed code was "matte appearance of the enamel surface with no loss of contour."

Table 4. Determined dental erosion scores.

Kod	N	%	Site of erosion
A1(-)	156	47.4	
A1(+)	24	7.3	
A2(-)	38	11.6	Labial or buccal only (67.5%)
A2(+)	2	0.6	
A3(-)	2	0.6	
B1(-)	4	1.2	Lingual or palatal only (1.2%)
C1(-)	24	7.3	
C1(+)	8	2.4	
C2(-)	7	2.1	Occlusal or incisal only (13.3%)
C2(+)	2	0.6	
C3(-)	3	0.9	
D1(-)	21	6.4	
D1(+)	14	4.3	Labial and incisal/occlusal (15.6%)
D2(-)	14	4.3	
D2(+)	2	0.6	
F1(-)	4	1.2	
F1(+)	1	0.3	Multisurface (2.4%)
F2(+)	3	0.9	
Total	329	100.0	
Code	**N**	**%**	**Grade of severity of erosion**
Code 1	256	77.8	Matt appearance of the enamel surface
Code 2	68	20.7	Loss of enamel only
Code 3	5	1.5	Loss of enamel with exposure of dentin
Total	329	100.0	
Code	**N**	**%**	**Area of surface affected by erosion**
Code -	273	83.0	Less than half of the surface affected
Code +	56	17.0	More than half of the surface affected
Total	329	100.0	

The prevalence of erosion among the children was 19.2% of the female children and 24.6% of the male children, but the difference was not statistically significant (p=0.157) (Table 5).

Table 5. Association of gender and plaque index, gingival index with erosion.

Variables	*Erosion present n/(%)*	*Erosion absent n/(%)*	*Total n*	
Gender				
Famale	47 (19.2)	198 (80.8)	245	X^2=2.00
Male	56 (24.6)	172 (75.4)	228	p=0.157
Plaque index				
Score 0	13 (13.0)[a]	87 (87.0)	100	X^2=6.15
Score 1	79 (23.7)[b]	255 (76.3)	334	p=0.046*
Score 2-3	11 (28.2)[b]	28 (71.8)	39	
Gingival index				
Score 0	18 (12.9)[a]	121 (87.1)	139	X^2= 9.45
Score 1	81 (25.2)[b]	241 (74.8)	322	p=0.009*
Score 2	4 (33.3)[b]	8 (66.7)	12	

†Different small letters indicate statistically significance within each column.
‡ p <0.05 statistically significant.

The mean age of the children who had dental erosion was statistically significantly higher than the mean age of those who did not have dental erosion (p=0.001) (Table 6).

Table 6. Association of tooth erosion with mean age, DMFT, DMFS, dft, dfs.

	n	*Mean age*	*Std. deviasyon*	
Erosion present	103	10.73	2.01	t=3.27
Erosion absent	370	10.00	2.02	p=0.001*
	n	Mean DMFT	Std. deviasyon	
Erosion present	103	1.50	1.86	t=2.29
Erosion absent	370	1.09	1.51	p=0.022*
	n	Mean DMFS	Std. deviasyon	
Erosion present	103	2.04	2.72	t=2.05
Erosion absent	370	1.49	2.28	p=0.043*
	n	Mean dft	Std. deviasyon	
Erosion present	103	1.61	2.30	t=2.55
Erosion absent	370	2.27	2.57	p=0.019*
	n	Mean dfs	Std. deviasyon	
Erosion present	103	2.27	3.24	t=3.07
Erosion absent	370	3.44	3.92	p=0.002*

†p <0.05 statistically significant.

The participants had a mean DMFT value of 1.18±1.60 and a mean DMFS value of 1.61±2.39, whereas the mean dft and dfs values of those in their mixed dentition period were 2.13±2.52 and 3.18±3.81 respectively. There was no significant relationship between the gender of the participants and their DMFT, DMFS, dft, or dfs values (p>0.05) (Table 7).

Table 7. Association of gender with mean DMFT, DMFS, dft, dfs.

Gender	*n*	*Mean DMFT*	*Std. deviasyon*	
Famale	245	1.20	1.68	t=0.40
Male	228	1.14	1.51	p=0.688
	n	Mean DMFS	Std. deviasyon	
Famale	245	1.58	2.40	t=0.31
Male	228	1.65	2.39	p=0.759
	n	Mean dft	Std. deviasyon	
Famale	245	2.25	2.58	t=1.09
Male	228	2.00	2.47	p=0.476
	n	Mean dfs	Std. deviasyon	
Famale	245	3.37	3.86	t=1.08
Male	228	2.99	3.76	p=0.279

In terms of their DMFT and DMFS values, there was a significant difference between the participants who had dental erosion and those who did not. There were statistically significantly higher DMFT and DMFS values among the participants who had dental erosion (p<0.05) (Table 6).

There was also a statistically significant difference between the participants who had dental erosion and those who did not have dental erosion in terms of their dft and dfs values (p<0.05). Those who had dental erosion had significantly lower dft and dfs values (p<0.05) (Table 6).

In the analysis of the relationship between dental erosion and dental plaque index scores, among the 103 participants who had dental erosions, the PI score was 0 (no plaque) in 13 participants (13.0%), 1 (separate flecks of plaque at the cervical margin of tooth) in 79 (23.7%), 2 (thin continuous band of plaque) in 10 (28.2%), and 3 (band of plaque wider than 1 mm but covering less than 1/3 of the crown) in 1 (<1%). The score of 1, and score of 2-3 were statistically significantly more frequent than the score of 0 among the participants who were found to have dental erosions (p<0.05). However, the difference between the prevalence of the score of 1 and the

scores of 2-3 was not statistically significant (p>0.05) (Table 5).

In the analysis of the relationship between dental erosion and gingival index scores, among the 103 who had dental erosions, the GI score was 0 (no inflammation) in 18 participants (12.9%), 1 (mild inflammation) in 81 (25.2%), and 2 (moderate inflammation) in 4 (33.3%), whereas no score of 3 (severe inflammation) was recorded in any of the participants. The scores of 1 and 2 were statistically significantly more frequent than the score of 0 among the participants who had dental erosions p<0.05). However, the difference between the prevalence of the scores of 1 and 2 was not statistically significant (p>0.05) (Table 5).

In the analysis of the relationship between gender and plaque index scores, there was no significant difference between the genders in terms of the frequencies of their scores of 0 or 1, whereas the scores of 2-3 were observed statistically significantly more frequently among the male children (p=0.008) (Table 8). In contrast, no statistically significant difference was found between the male and female children in terms of their gingival index scores (p=0.103) (Table 8).

Table 8. Association of gender with plaque index, gingival index.

Variables	*Famale n/(%)*	*Male n/(%)*	*Total n*	
Plaque index				
Score 0	55 (55.0)[a]	45 (45.0)[a]	100	X^2=9.53
Score 1	179 (53.6)[a]	155 (46.4)[a]	334	p=0.008*
Score 2-3	11 (28.2)[b]	28 (71.8)[c]	39	
Gingival index				
Score 0	81 (58.3)	58 (41.7)	139	X^2= 4.54
Score 1	160 (49.7)	162 (50.3)	322	p=0.103
Score 2	4 (33.3)	8 (66.7)	12	

†Different small letters indicate statistically significance within each column.
‡ p <0.05 statistically significant.

DISCUSSION

Nutritional and oral hygiene habits of children were not included in the study because the purpose of this study was to determine the prevalence of erosion of schoolchildren, and to reveal the relationship between the dental caries, gingival health status, dental plaque levels and dental erosion. This was the limitation of the study.

The development of the food and drinks industries has caused carbonated and acidic drinks to be increasingly supplied in the market and be consumed more frequently especially by children. This issue is considered to increase the prevalence and severity of tooth abrasion due to acidic factors, eventually leading to dental erosion.[19] Studies have determined that erosion formation today is rapidly becoming more prevalent.[20,21] Determination of the etiological factors of dental erosion is at the top of the preventive measures utilized by dentists.[22] Classification of the degree of erosion severity observed in an individual reveals the erosive factor the individual has been exposed to, as well as determines the protective measures to be employed. This is crucial for finding a solution for the existing problem and engaging in protective-preventive practices against erosions that may form later.[23]

For protection against erosion and for effective diagnosis, it is vital to utilize an index that is easy to use, can be used to evaluate both primary and permanent teeth, and may be easily replicable under different conditions. In the present study, we used the O'Sullivan index[15] which assesses the location, severity and affected surface area of dental erosion, and reflects even small changes in dental erosion; we believe it provides more detailed information than other indices in the literature.

In a study, the age group being analyzed may affect the prevalence of the dental erosion recorded. This study included children aged 7 to 14 years. As the probability of the teeth to be affected by attrition or abrasion is low in this age

group, it is easier to diagnose dental erosion. Additionally, acidic variables may sufficiently affect the teeth in the age group we selected.[24] Epidemiological studies conducted in different parts of the world analyzed similar age groups as well.[25-27] In this study, the age group of 7-14 years was selected to enable us to draw a parallel in the analysis of the prevalence of dental erosion and to compare our results to those of studies carried out in different countries.

In our study, 21.8% of the participants had dental erosion in at least one tooth; this is similar to the results of some previous studies.[12,28] There are also higher[29,30] and lower[11,31,32] results reported in the literature. The broad range of the prevalence of dental erosion may be attributed to several variables such as the type of index used to diagnose erosion, the sample size, inclusion criteria, age group, and the teeth that were examined.

According to the results of our study, among the 103 (21.8% of the sample population) participants found to have dental erosions in their permanent and mixed dentition periods, 329 teeth were affected by erosion. Out of these 329 teeth, 94.8% consisted of permanent teeth, while 5.2% consisted of primary teeth. Çağlar *et al.*[26] also reported a lower rate of erosion in primary dentition in their study, which examined both primary and permanent teeth; however, most studies in the available literature reported higher rates of erosion in primary teeth. Though previous studies found primary teeth to be more prone erosion due to their structural properties, in our study, the prevalence of erosion among the participants was examined as a whole without dividing the participants into primary and permanent dentition groups. Nevertheless, primary teeth were found to have a lower prevalence of erosion when the findings for primary and permanent teeth were assessed separately.

In this study the most frequently encountered erosion score was A1(-), the buccal surface was affected the most[11,12,31,33], the erosion was mostly limited to the enamel[11,25,28,31,32] and mostly less than half of the surface was affected by erosion[11, 31-33]; these result are similar to those of previous studies. From our observation, extrinsically encountered acids were mostly the causative agents of the erosion lesions we found in the participants; this inference was based on the assessment of the distances of the teeth to major and minor salivary gland openings as erosion was mostly found on the buccal surfaces of maxillary incisor teeth, which have a low rate of cleansing by saliva. Our observation that the erosion lesions detected in our study occurred without loss of contour in the enamel and in less than half of the surface may suggest that the severity of erosion was low and that the participants who had dental erosions in our study were exposed to erosive factors for a short time or constantly on low levels.

In our study, the prevalence of erosion was higher in male children, although the difference in prevalence between the male and female children was not statistically significant (24.6% in males, 19.2% in females). There are studies in the available literature that similarly found no significant difference between female and male patients in terms of prevalence of erosion.[11,12,32,34]

According to the results of our study, the mean age of the participants who had dental erosions was significantly higher than the mean age of those who did not have dental erosions. Similarly, Zhang *et.al.*[35] and Salas *et.al.*[25], reported that the prevalence of dental erosion was higher with increased age in their studies. This relationship between age and prevalence of erosion may be explained by the fact that dental erosion has a tendency to progress and is essentially a case of prolonged exposure to erosive factors.[21,36]

Dental caries and dental erosion are dental pathologies that are characterized by demineralization of hard dental tissues because of acid attacks.[37] An interesting point on the relationship between dental erosion and caries is the assumption that an acidic oral environment may increase the likelihood of caries in an individual by promoting the growth of

Streptococcus mutans (S.mutans), which is an acidophilic species of bacteria. There are studies in the available literature that examined the etiological factors of dental erosion and supported the assumption that children who have dental erosion have high numbers of S. mutans in their oral cavity.[1,38]

In our study, the participants with higher DMFT and DMFS values were found to have a significantly higher prevalence of dental erosion. Although this may be explained by the fact that the salivary characteristics of individuals with dental erosion and those with active caries are similar[39] and that such individuals also consume acidic beverages that contain more sugar (which is a risk factor for both dental erosion and cavities), we believe that teeth that are already structurally weakened by cavities may be easily affected by erosive factors. The results of studies in the available literature that showed a positive relationship between dental erosion and cavities corroborate our results.[33,34,38]

In our study, participants with higher dft and dfs values were found to have a significantly lower prevalence of dental erosion. It is believed that such a result emerged because of the finding that dft and dfs values, which are used to diagnose cavities in primary teeth, tend to be higher in younger age groups, who presented lower erosion rates in our study.

It is known that dental plaque serves as a reservoir for ions that prevent demineralization on dental surfaces and promote remineralization under suitable conditions.[2] In a study that investigated the progression of dental erosion with a follow-up time of four years, Hasselkvist *et al.*[40] determined that there was a higher prevalence of dental erosion in individuals with low plaque and gingival indices whereas Mantonanaki *et al.*[33], reported that children with low mean dental plaque scores had significantly higher rates of dental erosion. As opposed to the results of previous studies, the plaque index and gingival index scores were significantly higher among the children who had dental erosion in our study. The composition, thickness, and maturation time of dental plaque determines its level of protection against erosion. As dental plaque was most frequently seen near the gingival margin as a thin plaque (Score: 1) in our study, we believe it could not provide sufficient protection against acid attacks. Furthermore, studies have demonstrated that plaque can protect the tooth against demineralization to a certain extent in the case of acid attacks. Although it was found that dental plaque has a potential to reduce the level of demineralization in the enamel in the case of exposure to acid, it cannot completely prevent acid-related changes.[41] We believe that the protective effect of the plaque may have been rendered insignificant due to high levels of consumption of acidic drinks by the participants.

CONCLUSIONS

According to the findings of our study, there is a relationship between dental erosion and the parameters of dental caries, dental plaque levels, and gingival health. Although studying the risk factors for dental erosion as well as questioning the daily activities and personal dietary habits of patients is important, it is also vital to obtain information about their oral hygiene habits. On early diagnosis of dental erosion, individuals should be counseled on the improvement of oral hygiene and protective measures should be taken to minimize the risk of further erosion for the individual.

ACKNOWLEDGMENTS

This work was supported by the Scientific Research Project Fund Sivas Cumhuriyet University [Grant number DIS-212]. The authors thank to Dr Ziynet Cinar for her assistance with the statistical analysis.

CONFLICTS OF INTEREST STATEMENT

There is no conflict of interest.

Türkiye, Sivas İlinde Yaşayan 7–14 Yaşlarındaki Çocuklarda Çürük ve Ağız Sağlığı Durumunun Dental Erozyon Prevalansına Etkisi

ÖZ

Amaç: *Okul çocuklarında erozyon prevalansını belirlemek ve diş çürüğü, dişeti sağlığı durumları, diş plağı düzeyleri ve diş erozyonu arasındaki ilişkiyi ortaya koymaktır.* ***Gereç ve Yöntem:*** *473 çocuğun (7-14 yaş) temsili bir örneği üzerinde kesitsel analiz*

yapıldı. Çocukların muayenesinde O'Sullivan, Çürük-Eksik-Dolgulu (DMF), Plak ve Dişeti indeksleri kullanıldı. Elde edilen veriler ki-kare testi, Tukey testi ve çok değişkenli lojistik regresyon analizi kullanılarak değerlendirildi. ***Bulgular:*** *Çocukların %21,8'inde dental erozyon gözlendi. Lezyonlar çoğunlukla minede gözlendi, ancak bukkal yüzeyin yarısından azı etkilendi. Büyük çocuklarda erozyon istatistiksel olarak daha yüksek bulundu (p=0,001). Çocukların cinsiyeti ile erozyon arasında istatistiksel olarak anlamlı bir ilişki yoktu (p=0,157). Yüksek DMFT ve DMFS değerleri ile düşük dft ve dfs değerleri olan çocuklarda daha yüksek erozyon seviyesi gözlendi (p<0,05); dental erozyonu olan çocukların plak ve dişeti indeksi daha yüksek bulundu (p<0,05).* ***Sonuç:*** *Mine ile sınırlı olmasına rağmen, erozyon prevalansı yüksektir ve bu durum yaş, diş çürüğü, diş plağı ve dişeti iltihabı ile ilişkilidir.* ***Anahtar kelimeler:*** *Diş çürüğü, diş erozyonu, diş plak indeksi.*

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