

**DENTAL CARIES AND TREATMENT NEEDS IN RELATION TO PARENTS'
EDUCATIONAL LEVEL: A PLOT STUDY AMONG A GROUP OF YOUNG ADULTS IN
ERZURUM**

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**DIŞ ÇÜRÜĞÜ VE TEDAVİ GEREKSİNİMLERİYLE
EBEVEYN VE EĞİTİM DÜZEYLERİ ARASINDAKİ
İLİŞKİ: ERZURUMDA BİR GRUP GENÇ
ARASINDA PİLOT ÇALIŞMA**

ABSTRACT

The aims of this study were to assess the dental caries prevalence and treatment needs for a group of young adult in Erzurum and to examine the influence that parents' educational level (EL) may have on these data. The study was conducted on 145 subjects aged 18-23 years, having dental insurance and completed high school. The WHO criteria was followed in assessing dental caries and treatment needs of the subjects. For the 145 subjects 35 per cent were completely free of dental caries and only 58 percent had no missing teeth. The mean DMFT and D/DMFT were 5.36 and 30.79, respectively. There was no significant correlation between DMFT and D/DMFT scores of subjects and their father's EL. Although there was no association between mother's EL and DMFT, a significant relation between subject's D/DMFT scores and their mother's EL was found. Subjects whose mothers had only primary school education had significantly higher mean number of D/DMFT than subjects whose mothers completed university. The results showed that studies must be carried out in many areas such as service presentation, finance, human resources and oral health promotion. The authorities must take the results into account in preparing the national oral health programs in Turkey.

Keywords: dental caries, treatment needs, dental insurance, parents' education level

ÖZET

Çalışmanın amacı bir grup gencin diş çürüğü prevalansına ve tedavi gereksinimlerine ebeveynlerin eğitim durumlarının etkisini incelemektir. Çalışmaya yaşları 18-23 olan yükseköğretim mezunu ve sosyal güvencesi olan 145 hasta katılmıştır.

Bireylerin diş çürükleri ve tedavi gereksinimlerinin belirlenmesi WHO ölçütleri esas alınarak belirlenmiştir. 145 hastanın % 35'inde hiç çürüğe rastlanmamıştır. % 58'inde ise çekilmiş diş yoktur. DMFT ve D/DMFT değerleri sırasıyla 5.36 ve 30.79'dur. Bireylerin DMFT ve D/DMFT skorlarıyla babalarının eğitim düzeyleri arasında anlamlı bir ilişki yoktur. Bununla birlikte bireylerin D/DMFT skorlarıyla annelerinin eğitimleri arasında ilişki bulunmuştur. Annesi ilköğretim mezunu olanların üniversite mezunu olanlara göre D/DMFT ortalaması anlamlı bir şekilde daha yüksekti.

Sonuçlar göstermiştir ki hizmet sunumu, finans, insan kaynakları ve ağız sağlığının geliştirilmesi konusunda birçok çalışmaya gereksinim vardır. Uzmanlar ülkemizde milli ağız sağlığı politikalarını bu ölçütlere göre oluşturmalıdır.

Anahtar Kelimeler: Diş çürüğü, Tedavi gereksinimleri, Sağlık güvencesi, Ebeveyn eğitim düzeyi.

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INTRODUCTION

Dental caries is a chronic infectious disease affecting millions of children and adolescents worldwide. The prevalence of this disease is affected by many factors such as sex,¹ age,² dietary (nutrition) and tooth brushing habits,³ and cultural and socioeconomic factors e.g. religion, occupation^{4,5}, family income, education level⁶ and dental insurance.⁷

A decline in the occurrence of caries lesions in children has been observed in developed countries during the last 30 years.^{8,9} Nevertheless, in many developing countries, the prevalence of dental caries and periodontal disease are increasing thereby constituting a public health problem.^{10,11} This situation is particularly associated with countries where community-based oral dental health promotion and preventive programmes are not implemented.¹²

The health services in country is provided by state institutions and private sector. Because of the expensive dental treatment at private clinics, the majority of the people have recourse to the state hospitals. As these state institutions are insufficient to provide required dental services, oral health services are also carried out by the clinics of dental faculties routinely (probably different from the developed countries).

A number of epidemiological studies have been carried out in recent years, however systematic data on dental caries prevalence of young people are scarce.^{3,13,14} A study in Istanbul, where the economic status is better than the eastern region of the country, showed that the prevalence of dental caries in a group of young

people was 87 per cent.¹³ In two similar studies carried out in the western Turkey, it had been found that the caries prevalences were 86.6 per cent and 86 per cent, respectively.^{3,14} These results show that the prevalence of dental caries among young people in Turkey is as high as many developing countries.¹⁵⁻¹⁹

The aims of present study were to investigate the dental health status and treatment needs of a group of people aged 18-23 years old, completed high school and having dental insurance, in eastern Turkey, and to determine the effect of parent's educational levels (EL) on these data.

MATERIAL AND METHODS

This study was carried out from October 2002 to April 2003 in the department of conservative dentistry clinic of Faculty of Dentistry, University of Ataturk in Erzurum, Turkey. 145 subjects (59 male and 86 female) with ages ranging from 18 and 23 years old participated in this study. All participants had completed high school but not completed or joined university and had dental insurance.

Father's and mother's ELs of all the participants were determined by interviewing and scored as follows:

Level 1: completed primary school

Level 2: completed high school

Level 3: completed university

Oral examinations of the participants were carried out by one dentist. Bitewing radiographs were taken if necessary. The dental examination was performed according to the criteria of the WHO (WHO, 1979) and dental caries (DMFT) and the individual components of the DMFT

were calculated. The unmet treatment needs (D/DMFT), one of the individual components, is expressed as a ratio of the proportion of the mean decayed teeth (D) to the DMFT, and is determined as the untreated caries. The relationship between these data of the participants and educational level of their parents were also examined. The statistical evaluation was accomplished with the aid of SPSS 10.0 software. In bivariate analyses, the statistical evaluations of means were performed by use of the Student's t-test and one-way ANOVA. For all statistical tests, $p < 0.05$ was considered to be significant.

RESULTS

For the 145 subjects 35 per cent were completely free of dental caries and only 58 per cent had no missing teeth.

The mean values for DMFT and its individual components (D/DMFT, M/DMFT and F/DMFT) are shown in Table 1. As can be seen from the distribution of the DMFT components, the M component was the least important factor for the score. The largest component of the DMFT was attributed to filled surfaces. Statistically, there were no significant effect of gender on DMFT and D/DMFT ($p > 0.05$).

Table I. Means (M) and standard deviations (SD) of the DMFT for males and females and the contribution of each DMFT component. (n= number of sample)

Sex	N	DMFT M±SD	D/DMFT M±SD	M/DMFT M±SD	F/DMFT M±SD
Male	59	5.32±2.70	33.30±30.61	15.86±21.39	49.06±32.68
Female	86	5.39±2.64	29.06±28.50	13.73±16.91	54.77±32.00
Total	145	5.36±2.66	30.79±29.34	14.60±18.82	52.45±32.29

The DMFT and D/DMFT of the subjects related to the fathers' and mothers' ELs are presented in Tables II and III, respectively. There were no significant correlation between DMFT and D/DMFT scores of subjects and their father's EL. There were no association between mother's EL and DMFT either ($p > 0.05$). But statistical evaluation showed a significant relation between subject's D/DMFT scores and their mother's EL ($p < 0.05$). Further analysis showed that subjects whose mothers had only primary school education had significantly higher mean number of D/DMFT than subjects whose mothers completed university (Table IV).

Table II. Dental caries experience and unmet treatment needs (D/DMFT) of subjects related to their fathers' education level (EL)

Fathers' EL	n	DMFT M±SD	p	D/DMFT M±SD	p
1	60	5.35±2.99	0.435	27.26±31.64	0.222
2	43	5.11±2.67		28.04±27.93	
3	42	5.73±2.06		38.36±26.64	

Table III. Dental caries experience and unmet treatment needs (D/DMFT) of subjects related to their mothers' education level (EL)

Mothers' EL	n	DMFT M±SD	p	D/DMFT M±SD	p
1	112	5.38±2.79	0.962	27.85±30.06	0.046*
2	19	5.21±2.48		36.00±25.83	
3	14	5.42±1.74		47.21±22.26	

* $p < 0.05$

Table IV. The Duncan multicomparison results of treatment needs in relation to mother's EL

Group	Subgroup	Indices	Means	Result*
Mother's EL	1	D/DMFT	27.85±30.06	A
	2		36.00±25.83	AB
	3		47.21±22.26	B

x* It is known that the averages represented by the same letters are similar to each other, and those represented by different letters are different from each other.

DISCUSSION

It was well documented in several epidemiological studies that dental insurance and education level were important factors in determining use of dental clinics and dental care.^{7,19,21-24} Therefore, the present study evaluating the caries incidence and treatment needs of a group of young people between 18 and 23 years in the eastern region of Turkey, being less developed relatively, was conducted on subjects completed high school and having dental insurance.

In this study group the mean DMFT was determined to be 5.3. Recently, few papers have been published on the dental health of Turkish young people.²⁵⁻²⁷ In national oral health survey Saydam et al.²⁵ determined that DMFT values were 4.14 for 15-19 years old and 6.64 for 20-24 years old. Menteş et al's study (1995) on 65 young people showed that the mean DMFTs of women and men were 6.82 and 6.19, respectively. Karaoglanoglu examined 20 to 27-years old subjects and found the DMFT to be 5.86.²⁷ Due to the minor differences between age groups, it can be concluded that the mean value of DMFT of these studies and the mean DMFT of our study are similar.

In the present study D/DMFT was found to be 30.79. Aydemir and Ceylan²⁸ studying Turkish subjects aged 15 to 30 years found that D/DMFT was 19.58. A study carried out by Dindar²⁹ in İstanbul, the biggest city of Turkey, showed that D/DMFT was 48.73 for subjects aged 20-29. In another study conducted in İstanbul on 18 years old high school students, it was determined that the prevalence of untreated dentinal lesions was 87 percent.¹³ But, in both of the studies there had been no knowledge about dental insurance status of the subjects. When the developmental levels of the cities which the studies were carried out are compared, it might be surprising to see that the unmet treatment needs are lower in the present study than in İstanbul. This result made us imply that most of the participants in both Kulak-Özkan et al's 13 and Dindar's 29 studies had no dental insurance.

In another part of this study, the relationship between DMFT, D/DMFT scores of the subjects and parents' ELs were examined. No correlation was found between DMFT values of subjects and both fathers and mothers EL. These results are not in agreement with some of surveys carried out with 2 to 6 years old children on this topic and in these surveys a relation is appeared between children's dental caries incidence and their parental EL. farklılık The differences between the findings may be due to older subjects in our study.

When we evaluated the influence of parental educational level on unmet treatment needs of subjects, it was determined that fathers' EL was not effective on unmet treatment needs of their children, but mothers' EL was, and also higher unmet treatment needs were found in

children of mothers with university-level education than in children of mothers with only elementary-level education. Although this result seems surprising at first sight, it may be explained by the fact that in Turkey, women who completed only elementary school stay at home and have free time to care oral health of their children, whilst women with university-level education usually have a business life and cannot find enough time for dental visits of their children. Though the participants of this study are old enough to go to their dental visits themselves, it is declared that parents' dental visiting habits strongly affect their children's habits, and continue to exert this influence well into the adolescent period.³⁵ Ineffectiveness of fathers' EL on this topic could be explained that in Turkey; the mothers were responsible on the health care of their children, and also, the fathers have to work whatever their EL are.

Although the results of this study seem to be better than some studies,^{16,18,36} it was found that both the caries prevalence and unmet treatment needs of the subjects are high in spite of the fact that the subjects have dental insurance. Besides, the WHO had a set goal for the 2000 year as 85 per cent of people aged 18 would have all of their teeth (WHO, 1984). In this study it was determined that only 58 per cent of the subjects had no missing teeth. It is declared that the number of patients per dentist are high in Turkey, i.e. 5,000-10,000 in Erzurum, and 50,000 in some cities.³⁸ In this respect, patients even with dental insurance have difficulties for their dental treatments, and generally they can get a delayed dental appointment except teeth extractions. These negativities influence people to have extracted their teeth rather than to have

treated them. For these purposes, we conclude that the reorganisation of the health services is required in Turkey.

On the other hand, dental caries is a biosocial disease and it is clear that its prevention and treatment cannot be provided solely via the provision of appropriate health services. Rather, oral health conscience of people has to be promoted. This study also shows the need for oral health education for both Turkish children and parents. Such a goal may be achieved by educational programmes in schools and so it may be possible to reach all the children and to provide continuity of instruction with low cost.³⁹ In addition, the mass media, TV and radio may be used for this purpose also.¹⁵

CONCLUSIONS

In the present study carried out with 18 to 23 years-old subjects completed high school and having dental insurance,

- The mean DMFT was determined to be 5.3 and D/DMFT 30.79
- No correlation was found between DMFT scores of subjects and parent's educational levels.
- Fathers' educational levels were not effective on unmet treatment needs of their children, but mothers' educational levels were.
- Unmet treatment needs were found higher in children of mothers with university level education than that of children of mothers with only elementary school level education.
- Both the caries prevalence and unmet treatment needs of the subjects were high in spite of the fact that the subjects had dental insurance.
- This study showed the need for oral health education for both Turkish children and parents to

be promoted oral health conscience of people. In addition, the insufficiencies and disorder of the health services in the country indicate that studies must be carried out in many areas such as service presentation, finance, human resources and oral health promotion and authorities must take these into account in preparing national oral health programs in Turkey

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