Original Article

Determination of Decayed, Missing and Filled Teeth (DMFT) Index in the 12 Years Old Children of Hadishahr Province from Iran

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ABSTRACT

Background: decayed, missing and filled teeth (DMFT) index is introduced for determination of oral health and dental caries by World Health Organization (WHO). The purpose of this study was to determine the DMFT index among 12 years old school children in Hadishahr province of Iran.

Methods: This research was performed as descriptive and cross-sectional study in 2013-2014 on 266 students. The DMFT index was found by standard method suggested by WHO. The data were analyzed using SPSS software (version 18.0) and showed as mean ± standard deviation (SD).

Results: The mean± SD of DMFT value for students was 1.23 ± 0.09. 13.2% of children did not brush 53.8 % brush once and 33.1% brushed twice a day. Analysis showed that there was a significant correlation between DMFT index and brushing times. Also, there was not a significant association between DMFT index and educational level of parents.

Conclusion: The mean DMFT values in 12 years old students were in low level of the global standards proposed by WHO.

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Introduction

The socioeconomic condition could affect the dental health. One of the main indicators for oral health indexes is decayed, missing and filled teeth (DMFT), which is introduced as oral health evaluation criteria in the most researches. The DMFT index could compare the rate of dental caries in epidemiological research of various populations (1, 2). By 2011, the global mean of DMFT index for school children (12 years of age) was 1.67 and almost in 78% of countries , DMFT index was more than 3.0(3).Several parameters such as oral hygiene, diet, and culture of people, social, economic status, habits of racial in target people and low level of fluoride in water used can affect DMFT index (4). According to WHO proposal, the ranking level for DMFT index including:very low (less than 1.2),low (1.2 to 2.6), average (2.7 to 4.4) and high (more than4.4). Various studies in some region of Iran have been investigated DMFT index school children(5-8). Basir et al. showed poor relation between the fluoride concentration in the drinking water and DMFT index. Shidfar et al. (9) informed that by increasing the fluoride concentration in the drinking water (up to 1 mg/L) tooth decay was reducedin the industrial city of Ilam. Dindarloo et al(10) confirmed existing direct relationship between Fluoride concentrationand DMFT which it is mean that by increasing of fluoride DMFT index be increased. On the other hands, DMFT has significant relation with variables parameters such as living location, parents' works, interval of dental visit and brushing of teeth(11, 12).According to the determination DMFT indexas a main factor for evaluating the oral health in various region of Iran, the purpose of this study was to determine the DMFT index among 12 years old school children in Hadishahr province of Iran.

Materials and Methods

This descriptive and cross-sectional study was performed during 2013-2014 on 266 students who had 12 years old which were selected in Hadishar province, Iran. Inclusion criteria were: having 12 years old and sign a consent form byparents.Exclusion criteria were: having genetic disease such as Ectodermal dysplasia, amelogenesis imperfecta, as well as having periodontal disease, having systemic disease like as haemophilia or kidney disease. An oral health examination of 20 participants was conducted by two dentists who had sufficient clinical experience for this purpose.Because of more than 70% agreement between the two observers, experiment was done by one of the dentists. The design of the oral health analysis form is determined from the diagnostic procedures and standards according to the oralhealth examination assessment released by the WHO (13). Moreover, the questionnaires were finished by the students with the guidance of school teachers. The content of questionnaires included: demographic dataofstudent (sex,age),the education levelof their parents, job of their parents, the oral hygiene habits (frequency of brushing, length of brushing,) and DMFT.

Data Analysis: The data obtained from the study was analyzed using descriptive statistics (frequency, percentage and mean ± SD) by statistical software SPSS19.

Results

The demographic data of the students are shown in Table1 and 2.The DMFT index for all of the students was calculated 1.23 ± 0.9.

Table 1: Sex, frequency of brushing, education level and job of parents

Variables		No. (Frequency)
sex	boys	119 (44.7%)
	girls	147(55.3%)
Frequency of brushing	Zero	35(13.2%)
	Once	143(53.8%)
	twice	88(33.1%)
Education level of parents	Pre-high school	78(29.3%)
	High school	97(36.5%)
	Bachelor	71(26.7%)
	sciences	19(7.1%)
	doctor	1(0.4%)
Jobs of the parents	Employee	81(30.5%)
	self-employment	64(61.7%)
	Teacher	21(7.9%)
Total		266(100%)

Table 2: Relation between DMFT and sex, frequency of brushing, education level and job of parents

Variables		No. (Frequency)	P value
Frequency of brushing	Zero	3.74± 0.07	0.000ᵃ
	Once a day	1.34±0.1	
	Twice a day	0.057±0.02	
Education level of parents	Pre-high school	1.25±0.16	0.698ᵇ
	High school	1.1±0.14	
	Bachelor	1.41±0.18	
	sciences	1.1±0.36	
	doctor	2	
Jobs of the parents	Employee	1.2±0.11	0.545ᵇ
	self-employment	1.2±0.16	
	Teacher	1.57±0.36	
Total			

α:p value obtained by One Sample T test . b:One-Way ANOVA (p < 0.05 : significant level).

Discussion

According to outcomes of this study, the mean DMFT values in students were 1.23±0.09. Moreover, statistically significant differences were found between the frequencies of brushing among the 12 years old students and DMFT index while significant relationship between DMFT and level of education and parent's job was not found. Amirabadi et al. (2015) observed that the mean ±SD of DMFT value for 8-12 years old children in Zahedan City was 1.02 ± 1.36which it was lower than our study. Besides this, boys had higher mean DMFT value (1.01 ± 1.41) in comparison to girls (1.00 ± 1.41).In contrast to our study, analysis of variance analysis indicated that there is not a significant relationship between DMFT index and brushing times[14].The DMFT index of different region of Iran was reported by various investigations. This index between children was 1.48 ± 0.13 in Behshahr city, 2.98 ± 1.95 in Babol city, in Mianeh city 0.347 ± 0.09 to 6.98 ± 0.44 (for 6 years old) and 1.41 ± 0.161 to 8.02 ± 0.32 (for 9 years old),1.8 ± 1.73 in Dayer city[15-17]. Differences between MDFT indexes between children are influenced by to many factors such as fluoride concentration of drinking water in various regions, nutrition habits, racial differences, socio-economic status. The DMFT of 12−year−old girls of Behshahr city was more than boys (1.21 ± 0.16), while the average of fluoride concentration in drinking water was equal 0.25 mg/land the fluoride content in Arsanjan was from 0.1[17, 18]. Several public health agencies suggest that low level of the fluoride(1.5 mg/L according to the guideline of WHO) could be mixed to drinking waters to help the improvement of dental health and decrease MDFT index[19]. Moreover, children with low level of oral hygiene habits have unfavorable oral health because the analyses of brushing habits and oral health status of children showed significant differences.

Conclusion

In this research the mean DMFT values in 12 years old students were in low level of the global standards proposed by WHO and no prelateship was found between level of education and jobs of parents with DMFT level. It is suggested that fluoride concentration of drinking water in Hadishar will be evaluated to found correlation between DMFT level and its concentration.

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COMPETING INTERESTS
None declared

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