



AENSI Journals

Journal of Applied Science and Agriculture**ISSN 1816-9112**Journal home page: www.aensiweb.com/jasa/index.html

The Effect of Caries Experience in Primary Molars in Schools of Tehran

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ARTICLE INFO

Article history:

Received 23 January 2014

Received in revised form 25

February 2014

Accepted 26 February 2014

Available online 5 April 2014

Keywords:

Primary School Children, Dental Carie Iran.

ABSTRACT

Background: From a purposeful and developmental purpose of view, the primary permanent molars are the important teeth, with the key role in occlusion. The most roles of first permanent molars are established in balanced occlusion. Loss of first permanent molars, as a result of dental caries, negative affects each arch and has adverse effects on occlusion. The loss of a first permanent molar in an exceedingly child will cause changes within the dental arches which will be derived throughout the lifetime of that person. **Objective:** The purpose of this study is providing the basic approach to choose management tools. The aim of this study was to evaluate the treatment needs of first permanent molars in an exceedingly group of schoolchildren in Tehran. In October 2012, as an epidemiological survey, this research was conducted with 526 third-grade school children who were learning in 16 primary schools of Tehran. The schools were at random selected from every district. By a double-blind approach, treatment needs and DMFT of first permanent molars were calculated for first molars consistent with Oral Health Surveys. All mentioned data together with hygiene habits and first molars dental caries status was analyzed using SPSS statistical software. The importance was set at $P < 0.05$. **Results:** The 97.9% of all school children had received the fluoride-solution for 3 years and 87.7% of the school children brushed a minimum of once on a daily basis however unfortunately, 91.63% of students didn't floss. The first-molars oriented DMFT of this population was 0.6290 ± 1.0337 within the case of girls; the first-molar DMFT was 0.7498 ± 1.1187 whereas in boys it had been 0.5121 ± 0.8598 . In result, the girls' dental caries rate was considerably additional than boys. ($P < 0.0009$). **Conclusion:** High treatment needs and dental caries prevalence in permanent first molars in Tehran schoolchildren show that caries remains a very important problem within the children of our society; so, either in favor or against of caries-facilitating role of oestrogene, an additional comprehensive study is critical to seek out the exact factors inflicting higher frequency of female first-molar dental caries in primary school ages.

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To Cite This Article: Arimin Tajmirriahi and Seyed Ali Fazeli., The Effect of Caries Experience in Primary Molars in Schools of Tehran. *J. Appl. Sci. & Agric.*, 9(3): 1091-1094, 2014

INTRODUCTION

Dental caries is highly prevalent and a significant public health problem among children throughout the world. It is widely accepted as, one of the most common and costly chronic diseases in the global population. The most roles of first permanent molars are established in balanced occlusion. A carious lesion will develop quickly within the first permanent molar and sometimes progress from an incipient lesion to pulp exposure during a 6-month period. The relationship between caries experience within the primary and permanent dentition has been realized in other studies complete that caries experience in 3 or a lot of deciduous molars at the age of 5 was the most effective predictor of caries experience within the permanent initial molars at the age of 7.

The loss of a first permanent molar during a child will result in changes in the dental arches that may be copied throughout the lifetime of that person. It's according that early extraction of those teeth results in the tilting of neighboring teeth to hollow areas, supere-ruption of the teeth within the opposite arch, unilateral chewing, shifts in midline and dental malocclusion. Furthermore, early loss of first permanent molars creates periodontal problems. Based on these researches permanent first molars are of utmost importance in children (Skeie MS, et.al.2006). Additionally, although the prevalence of dental caries among children has decreased within the developing countries, there has been an increase within the prevalence of dental caries in some developed world.

The majority of low-income families don't have access to sufficient resources to supply essential health take care of their children (Peretz B, Ram D, Azo E, Efrat Y. 2003). These changes, unless applicable corrective

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measures square measure instituted, include diminished local perform and drifting of teeth and continued eruption of opposing teeth. within the data that is associate degree communicable disease which the majority of caries experience within the deciduous dentition of schoolchildren is located within the primary molars teeth that square measure adjacent to the permanent first molars for about 5–6 years the question arises what the impact of associate degree affected initial and/or second primary molar is on the incidence of visible caries experience within the adjacent permanent first molar. The aim of this project was to study, the dental caries status of various first molars in male and female primary school children in Tehran.

2. Methodology:

In October 2012, as an epidemiological survey, this study has conducted with 526 third-grade school children who were studying in 16 primary schools of Tehran. 269 were female with 9.01 ± 0.51 years old (Mean $\pm$ SD) and the remainder were male with 9.14 ± 0.35 years old. Approval from the authorities was obtained before the research. The parents were sent an information sheet about the research, and only children with informed consent forms were evaluated. The World Health Organization (WHO) oral health form was used to record data. By a double-blind approach, some dental hygiene habits of all the students were asked and recorded in questioners. These habits were about the histories of fluoride-solution applications, brush frequency and dental flossing. In addition, caries status i.e., decays, missing and filling, of each of four permanent first molars was assessed in the case of all individuals and the relevant DMFT was calculated solely for first molars according to Oral Health Surveys Basic Methods (S. A. Fazeli, S. A. Fazeli. 2005). All mentioned data together with hygiene habits and first molars dental caries status were analyzed using SPSS 16 statistical software. The significance was set at $P < 0.05$.

3. Result:

The students' histories of dental hygiene habits are summarized in table 1. As shown throughout this table, 98.5 maximize all schoolchildren have received the fluoride-solution for 3 years. However, the length of girls' administration (3.0000 ± 0.1981 years) wasn't significantly fully completely different from the boys' (3.0063 ± 0.1778 ; $P=0.956$).

Table1: Children's histories of Fluoride-solution application, Brush frequency and dental flossing

Fluoride-solution Application			
	Total students	School- girls	School- boys
1 year	3	2	1
2 years	3	1	2
3 years	515	263	252
4 years	3	2	1
5 years	2	1	1
Brush Frequency			
	Total students	School- girls	School- boys
3 t/day	79	47	32
2 t/day	104	72	32
1 t/day	238	100	138
4 t/week	4	3	1
3 t/week	3	2	1
2 t/week	2	1	1
1 t/week	9	6	3
Weekly but irregularly	22	12	10
Sometimes	15	5	10
Never	50	21	29
Dental Flossing			
	Total students	School- girls	School- boys
3 t/day	9	3	6
2 t/day	6	3	3
1 t/day	18	11	7
4 t/week	1	0	1
3 t/week	2	1	1
2 t/week	1	1	0
1 t/week	1	0	1
Weekly but irregularly	2	1	1
Sometimes	4	2	2
Never	482	247	235

With a large spectrum of brush frequencies, 9.5% of students never brushed whereas 15.01% of them brushed three times a day; but, taken as a complete, 87.7% of the schoolchildren brushed a minimum of once a day. In distinction to the girls that merely 7.8% of them never brushed, 11.91% of boys did not brush. Also, the count of girls who brushed three times a day (17.47% of all girls).

The 91.63% of students did not floss and only 1.71% of them flossed three times a day. Though the number of girls who flossed three times a day was however corresponding boys but never-flossing boys were quite girls who did not floss.

According to the results summarized in Table 2, the first-molars destined DMFT of this population was 0.6290 ± 1.0337 in order that D-, M- and F-components were 92.2% of students didn't floss and only 1.2% of them flossed 3 times every day. Though the amount of girls who flossed three times a day was but corresponding boys (0.6% of girls vs. 1.9% of boys); however never-flossing boys were more than girls who failed to floss (93.1% boys vs. 92.2% of girls). Consistent with the results summarized in Table 2, the first-molars destined DMFT of this population was 0.6290 ± 1.0337 in order that D-, M- and F-components were 9 girls (5.4% of girls) and 3 boys (1.9% of boys) were pan-carries individuals

Table 2: First- Molar oriented DMFT of studied children and counts of carries-free and pan-carries individuals.

Total students	School- girls		School- boys
First-molars DMFT1			
All	0.6290± 1.0337	0.7498+ 1.1187	0.5121± 0.8598
Mandibular	0.4501± 0.7612	0.5611 ± 0.8197	0.3297± 0.6288
Maxillary	0.1797 ± 0.4988	0.2103 ± 0.5531	0.1609 ± 0.4579
Caries-free			
Individuals			
All	344	104	110
Mandibular	372	177	195
Maxillary	456	230	226
Pan-carries			
Individuals			
All	31	23	8
Mandibular	80	57	23
Maxillary	27	18	9

(The values of DMFT were reported as mean $\pm$ SD)

Among 526 students, 344 pupils (65.39% of all) were caries-free individual i.e. had no first-molar dental caries (DMF=0). In contrast, 19 students (3.6% of all) were pan-carries who have four first-molar dental caries (DMFT=4). Also, 522 children (99.23% of all) had been incomprehensible no first molars and just 4 students (0.7% of all) had not one of them.

In the case of girls, the first-molar DMFT was 0.7498 ± 1.1187 while the boys' were 0.5121 ± 0.8598 . Therefore, the girls' dental caries rate was considerably much above boys' ($P < 0.0009$). The mandibular and maxillary first-molars, in turn, show different caries rates; so that the mandibular DMFT of all students was higher than their maxillary's 0.4501 ± 0.7612 vs. 0.1797 ± 0.4988 ; $P < 0.0009$. The girls' upper jaws had a higher rate of first-molar dental caries than their lower jaws (0.5611 ± 0.8197 vs. 0.2103 ± 0.5531 ; $P < 0.0009$). A similar comparison between relevant boys' values showed similar findings regarding the first-molar dental caries status of two jaws (0.3297 ± 0.6288 of mandibular vs. 0.1609 ± 0.4579 of maxillary; $P < 0.0009$).

Individuals whose each mandibular first molar were intact (DMFT=0), were 372 individuals as well as 177 girls and 195 boys. Compared to them, 456 students (230 girls and 226 boys) had no dental caries of maxillary first molars. Whereas just 27 people (18 girls and 9 boys) had two first-molar dental caries (DMFT=2) in their maxilla; 80 children (57 girls and 23 boys) had an equivalent status for mandibular first molars.

4: Discussion:

In comparison to similar studies in different developing countries, the studied schoolchildren of Tehran had a lower rate of first-molar dental caries. For example, in Warren et al study, mean DMFT computed exclusively from first-molar information for Taiwanese first-grade children were 1.19. The results showed, though the girls' tendency to observe the dental hygiene was quite the boys; the females had higher rates of first-molar dental caries instead of the males. As a result, the boys had a lot of treatment wants than girls, which could be attributed to a greater attention paid to oral health by girls as compared with boys. In agreement to present results, Warren et al additionally found the schoolgirls experienced higher rates of first-molar dental caries than their boy counterparts. Consistent with Holt RD.1995, it's recognized that in nearly any population group, higher frequencies of caries are found in girls than in boys. Additionally, studies of Leroy R, Bogaerts K, et.al (2005) showed that the adult females additionally had higher dental caries frequency than adult males. So, it looks that there are some factors that precipitate the dental caries of females' initial molars. As a basis of those variations, Marthaler TM.2004 incontestable that diethylstilbestrol and estradiol are accountable for augmented dental caries development on experimental rates. Their data indicated that androgens are without effect on dental caries development in either male or female rates, whereas oestrogens increase dental caries considerably. There are different data in the literature that support their findings. The difference in serum concentrations of estradiol

between boys and girls is truth reality.' estradiol is considerably higher in girls, and girls have the next incidence of dental caries. It's general data that the amount of estrogens is higher in girls than in men. in step with these experiences, it will so be concluded that beside environmental issue the oestrogene may be a culprit in dental caries development as a host factor however some studies else create the conclusion difficult. Hence, in contrast to the first cluster of studies, these experiences predict the lower rates of dental caries for females. As another result, it absolutely was shown that the distinction between dental caries status of mandibular and maxillary first molars was additional considerable in may be. So, it appears that the females' caries-precipitating factors, could have higher impacts on the mandibular first molars or their impacts could also be reinforced by alternative factors. The initiating events of the first-molar dental caries were forgotten, the loss of first molar in these ages will cause severe sequalae. The second molars, although interrupted, begin to drift when the loss of the first permanent molar. Although the premolars can un-dergo the best quantity of distal drifting, all the teeth anterior to the space, together with the central and lateral incisors on the side wherever the loss occurred, could show evidence of movement. Contacts can open and also the premolars, particularly, can rotate as they fall distally. Once the maxillary first permanent molar loses its opponent, it'll erupt at a quicker rate than the adjacent teeth. The process also will be carried in conjunction with molars and can cause problems when prosthetic replacements are required.

5. Conclusion:

High treatment needs and dental caries prevalence in permanent first molars in Tehran schoolchildren show that caries remains a very important problem within the children of our society; so, either in favor or against of caries-facilitating role of oestrogene, an additional comprehensive study is critical to seek out the exact factors inflicting higher frequency of female first-molar dental caries in primary school ages.

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