Prevalence of dental attrition among 5-11 year-old children in Albu-Etha village (Baghdad)

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ABSTRACT

Background: Dental attrition is one of the problems affecting the tooth structure. The aim of this study was to determine the prevalence of dental attrition.
Materials and methods: a sample of 98 children aged 5-11 years in Albu-Etha village in Baghdad was examined according to Hansson and Nilner classification.
Results: The results showed that boys had higher attrition scores than girls and most of the diagnosed dental wear was of a grade II and mostly in the canine regions. Dental wear of primary teeth was found mostly in the canines while dental wear of permanent teeth was found mostly in the incisors.
Conclusion: Dental attrition was found to be higher in permanent teeth than in primary teeth.
Keywords: Dental attrition, prevalence, children. **(J Coll Dentistry 2005; 17(1): 105 -107)**

INTRODUCTION

Attrition and abrasion are often used synonymously, but these concepts are different and defined [(1)]. Tooth attrition means all wearing down of tooth substance with tooth contact, where as dental abrasion is strictly concerned with tooth wear due to an abrasive component between the tooth surfaces. Erosion means loss of tooth substance under the influence of acid.

Many factors have been found to cause incisal and occlusal breakdown including masticatory habits and parafunctions [(2, 3)]. Dental attrition is considered the most visible sign of functional wear and possibly bruxism [(4)]. The composition of the saliva [(5)], dietary variables [(6)], digestive disturbance and industrial environmental factors [(7)], were found to influence the dental wear.

Several studies have been done in other parts of the world on dental attrition and wide age ranges of population examined [(1, 4, 8, 9)]. In Iraq, although few studies have been carried out to investigate tooth attrition and mainly a study was carried out on 1500 Iraqi children of 5-14 years old to investigate bruxism and related factors [(10)], and Al-Obaidi and Rassim [(11)] investigated the prevalence of dental attrition in relation to tempromandibular joint problem among 166 Iraqi population aged 12-30 years, but there is still a lack in the knowledge concerning the [1]dental wear in children. Therefore it was decided to conduct a cross-sectional study in Albu Etha village to investigate the prevalence and severity of incisal and occlusal tooth wear among Iraqi children, in order to evaluate the changes in the oral health and to provide a baseline data aids for future comparison with other studies.

MATERIALS AND METHODS

A total sample of 98 children aged 5-11 years old from Albu-Etha village in Baghdad, these included 59 boys and 39 girls were examined intra-orally for generalized tooth wear. The examination was done by using an ordinary chair, sunlight and sterile dental mirror. The severity of attrition was determined according to Hansson and Nilner [(12)] and Nilner and Lassing [(13)] classification:

0 = No wear.
1 = Wear of enamel only.
2 = One or more teeth worn into dentine.
3 = One or more teeth worn up to 1/3 of the crown.
4 = Extensive wear of one or more teeth more than 1/3 of the crown.

Chi-square test was applied for statistical analysis of the data. Differences were accepted at a level of significance of 0.05.

RESULTS

Table1 showed the prevalence of attrition according to sex. The total sample consisted of 98 children, 59 boys and 39 girls. 51 (52%) children from 98 with dental attrition, 33 boys (55.9%) and 18 girls (46.2%).

Table-2- showed the frequency distribution of attrition scores according to the segment, boys had higher attrition scores than girls. There is no association between the sex and the

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dental wear according to segment ($p<0.05$). The canines region showed higher attrition scores of both sexes (32.7%) and less in centrals (31.7%) and then (27.7%), (7.9%) for molars and premolars, respectively.

The distribution of dental wear scores according to severity was illustrated in Table-3-. Dental wear scores of both sexes were found to be commonly of grade II (70.3%).

Table-4- showed distribution of traumatic children according to the severity of attrition. From 33 boys found 29 (87.9%) had grade II and less in grade I then III and IV while from 18 girls found 16 (88.9%) had grade II and less in grade I.

Table-5- showed frequency distribution of attrition scores according to primary and permanent teeth. For primary teeth, the canines showed to be the most commonly involved, while incisors were the least affected. For permanent dentition the incisors were found to be the most commonly affected. While, the premolars the least affected. For the total number, it was found that permanent dentition more affected by dental wear than primary dentition (Table-5-). The association between types of teeth and dental attrition according to segment was found to be significant ($p<0.05$).

DISCUSSION

In this study, most of the diagnosed dental wear was of grade II and mostly in the canine regions. This finding is in agreement with other studies [11, 14]. Dental wear of primary teeth was found mostly in the canines. This finding disagreed with Bernal and Tsamtsouris [15], who reported that most of dental wear of primary teeth of mild type and mostly in the incisors. The frequency of wear recorded at the canines for primary teeth may be attributed to delay exfoliation of these teeth (about 11-12 years), so they exposed to dental factors more than the other teeth.

On the other hand, dental wear of permanent teeth was found mostly in the incisors and this was consistent with many studies [10, 16, 17]. The high frequency of wear recorded at the incisors may be attributed to earlier eruption of these teeth (about 6 years) so they exposed to dental factors earlier; in addition, certain oral habit like object and nail biting which are commonly seen in children may be contributed with dental wear of incisors. Dental attrition was fount to be higher in permanent teeth than in primary one, this finding was in disagreement with Ahmed study [18].

Table (1): Prevalence of attrition according to sex.

Sex	No.	Without attrition		With attrition	
		No.	%	No.	%
M	59	26	44.1	33	55.9
F	39	21	53.8	18	46.2
Total	98	47	48	51	52

Table (2): The frequency distribution of attrition scores according to the segment.

Sex	Sum. Of scores	Incisors		Canines		Premolars		Molars	
		No.	%	No.	%	No.	%	No.	%
M	61	19	31.1	20	32.8	6	9.8	16	26.3
F	40	13	32.5	13	32.5	2	5	12	30
Total	101	32	31.7	33	32.7	8	7.9	28	27.7

$X2=0.8515$ $p<0.05$ d.f=3 not significant.

Table (3): The frequency distribution scores according to the severity of attrition.

Sex	Sum of scores	I		II		III		IV	
		No.	%	No.	%	No.	%	No.	%
M	61	12	19.7	44	72.1	3	4.9	2	3.3
F	40	7	17.5	27	67.5	4	10	2	5
Total	101	19	18.8	71	70.3	7	6.9	4	4

Table (4): Distribution of the traumatic children according to the severity of attrition.

Sex	No.	I		II		III		IV	
		No.	%	No.	%	No.	%	No.	%
M	33	11	33.3	29	87.9	3	9.1	2	6.1
F	18	5	27.8	16	88.9	2	11.1	2	11.1
Total	51	16	31.4	45	88.2	5	9.8	4	7.8

Table (5): Frequency distribution of attrition scores according to primary and permanent teeth.

Teeth	Incisors	Canines	Premolars	Molars	Total
1^o	5	23		19	47
2^o	27	10	8	9	54
Total	32	33	8	28	101

X2=31.48 p<0.05 d.f=3 significant

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