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A REPORT OF A DENTAL HEALTH SURVEY OF SCHOOLCHILDREN IN ISFAHAN, IRAN.

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ABSTRACT

The DMF index of 2000 school children (1000 boys, 1000 girls) 10 to 15 years old is reported. Cases were selected randomly among the school children of different schools, situated in various economic zones of the city. Almost 50000 permanent teeth have been examined for healthy, decayed (D), missed (M), and filled (F), and recorded as the DMF index. The mean DMF index of boys and girls under study was found to be 5.44 and 5.52 respectively, with an overall mean DMF index of 5.47; there was no significant difference between the DMF indices of boys and girls.

Introduction

The DMF index has been recommended by the W.H.O. as a parameter by which to assess the dental health situation in various societies (1). It has also been shown that the DMF index is directly correlated with the health, and economic, cultural, and social state of the society, as well as with the anthropological and genetic make up of the society, and therefore it can be used for comparative studies (1). The DMF index is calculated simply as the total number of decayed (D), missed (M), and filled (F) teeth, divided by the number of cases investigated. Great variation between societies has been noted, and values of between 4 and 16 have been reported in different countries by various investigators (2, 3, 4, 5, 6, 7). The only available data regarding the DMF index in Iran are those reported by a W.H.O. visiting

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professor, A.J. Held, who, in 1962 reported a DMF index of 5 for Iranian school children 13-14 years old in the cities of Shiraz, Mashad, Isfahan and Tehran (2). Prior to Held's report however, another W.H.O. expert, G.A. Newitt in 1959 carried out a dental health survey in several cities of Iran (8). Although Newitt studied more than 250 cases in Isfahan, no DMF index was reported. The present work, therefore is apparently the first attempt by an Iranian dentist to calculate a DMF index in Iran. It is worth mentioning that the teeth that have been missed due to accident or any other reason apart form dental diseases are not taken into account when calculating the DMF index.

Selection of samples and method of analysis.

Random sampling was carried out by the administrative staff among the school children in different schools situated in various areas of the city, each having a different standard of living. The examination was carried out in a double blind manner in order to minimize analytical error. Dental units, forceps, mirror and explorer were the main apparatus used to carry out the examination. All dental cavities where the explorer entered without any resistance were regarded as decayed, while plaques seriously resistant to the explorer's entry were not counted as decayed teeth.

Results.

A. 10-15 year old girls.

The results of the analysis of DMF index in 10-15 year old school girls are tabulated in table 1. It can be seen from this table that out of a total D + M + F of 5518, only 57 filled teeth (1.03%) were present, while the number of missed teeth was 167 (3.02%), and therefore the great majority of the teeth included in the DMF index were decayed (95.94%). The DMF index in this group of children was 5.52.

B. 10-15 year old boys.

In table 2 the results of investigation on 1000 Isfahani schoolboys is summarized. In this group the total D + M + F were 5438, out of which 5298 were decayed (97.42%), with 24 filled (0.44%), and 116 missed (2.13%). amd the DMF index was 5.44.

C. 10-15 year old boys and girls.

In table 3 the results obtained on the total 2000 cases (boys and girls) is reported, with an average DMF index of 5.47 and a ratio of D, M, and F to total D + M + F of 96.67%, 2.58%, and 0.74% respectively.

D. Relation of age to DMF index in boys and girls.

The DMF index for various age groups of boys and girls are presented in table 4. It can be seen from this table that there is an increase in the index with age in both groups investigated. The DMF index of 2.85 at 10-11 years in boys increases to 7.77 in the 15-16 year age group. In the case of girls the index increases from 3.68 (10-11 years) to 8.56 (15-16 years).

Discussion.

The relationship between the DMF index and the culture, standard of living and particularly with dental health is well established (See the introduction). Ast (9) has shown that even on entering school, 75-90% of children in the United States have dental caries. Dental caries is perhaps therefore the most prevalent disease to which man is subjected, and its importance is emphasized by consideration of its irreversible nature. Despite the widespread nature of the diseases of the teeth, increased dental health care could decrease it significantly.

Little published information is available concerning the DMF index of the Iranian population, but the author has no doubt that many enthusiastic Iranian dentists are now collecting such important data. The DMF index of 5.47 reported in this paper for Iranian school children may be discussed in relation of the figures given for other countries. For example, Jackson et al. (10) have reported a DMF up to 11.44 in 15 year old English children. In a total of 1110 reported cases, the ratio of D, M, and F was calculated to be 13.42%, 16.03% and 70.74% respectively. It can be seen from the above figures that the highest percentage figure falls in the F group, indicating a greater extent of dental care in England. In the present results, however, the majority of abnormal teeth fell into the D group, despite the lower DMF index, ie. 96.67% of the D + M + F were decayed compared to 70.74% in England. The fact that such a high proportion of Iranian patients are among the D group emphasizes the necessity of education of Iranian parents and children to take more notice of their dental health.

English children might be related to the lower consumption of sweets and chocolates in Iran. It could also be related to the plentiful sunshine in Iran which would supply plenty of vitamin D. The relatively high fluoride content of the water in Isfahan could also be a contributing factor to the lower DMF index in these children (11).

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Table 1

DMF index among Isfahan school children aged 10-15 years (female)

Number examined	D	M	F	Total D + M + F	DMF Index
1000	5294	167	57	5518	5.52

Table 2

DMF index among Isfahan school children aged 10-15 years (male)

Number examined	D	M	F	Total D + M + F	DMF Index
1000	5298	116	24	5438	5.44

Table 3

DMF index among Isfahan school children aged 10-15 years (males and females)

Number examined	D	M	F	Total D + M + F	DMF Index
2000	10592	283	81	10956	5.47

Table 4

The relation between DMF index and age in Isfahan school children.

Age years	DMF girls	DMF boys
10	3.68	2.85
11	4.38	4.07
12	4.02	4.75
13	5.41	5.86
14	6.84	6.67
15	8.56	7.77